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ABSTRACT

This report contains one-page summaries of a majority of the 134 research studies funded through the Oklahoma Consortium on Research Development. The research covers the whole spectrum of academic topics , from nursing to ecology to art to politics.. Brief summaries of a majority of the 37 development seminars funded through the Consortium are also included in this report. (AF)

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Pilot Research Summaries

1969-1970

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PILOT RESEARCH SUMMARIES
1967 - 1970

Prepared by

James L. Casey
Oklahoma City Public Schools
and
Larry K. Hayes
Project Supervisor

Oklahoma Consortium on Research Development
Oklahoma State Regents for Higher Education
State Capitol, Oklahoma City

June, 1970

FOREWORD

The Oklahoma Consortium on Research Development had as one of its objectives the upgrading of intrainstitutional research capabilities of member institutions leading to the improvement of instruction through the involvement of faculty and students in research and program development activities.

This publication contains a one-page summary of a majority of the 134 research studies funded through the Consortium. These studies represent a $41,241 investment from Consortium funds and $50,130 matching funds from member institutions.

Final reports for each of these pilot research studies are on file in the office of the Oklahoma State Regents for Higher Education for review by those who are interested.

Included in this publication are brief summaries of a majority of the 37 development seminars funded through the Consortium. These summaries represent a $21,055 investment from the Consortium and $17,653 matching funds from member institutions.

Larry K. Hayes
Project Supervisor

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Title: Aliphatic Compounds in Hydrothermal Gases

Researcher: Bobby D. Gunter, Assistant Professor of Chemistry

Institution: Southwestern State College

Abstract

The objective of this project was the collection and analysis of several large gas samples from the thermal features at Yellowstone National Park. This objective was achieved during the period from May 25, 1968 to May 30, 1968.

The original plan was to collect ten samples, but heavy snow around Washbourn Springs on Washbourn Mountain reduced the number to eight. The two missed samples were not deemed critical to the study. The eight large (about twelve liters each) gas samples were collected on May 27 and May 28. The samples collected represent a spectrum of feature characteristic. These features represent a pH range from 5.0 to 8.2, an aqueous termperature range from 29.5 degrees centigrade to 81 degrees centigrade, a CO_2 range from 59.62 to 95.98 mole percent, an O_2 range from a trace to 8.13 mole percent, a N_2 range from 2.63 to 31.43 mole percent, and a CH_4 range from .45 to 3.58 mole percent. These ranges should give adequate data on aliphatic compounds to be representative of the features at Yellowstone National Park.

Work continued to progress on the completion of the analyses of the samples and on the incorporation of this information into a proposal for a more comprehensive study of hydrothermal gases.

Title: An Analysis of the Attitudes of Administrators and Board Members of Church-Related Colleges in Oklahoma Toward Federal Aid to Church-Related Colleges

Researcher: Norman N. Bonner, President

Institution: Bartlesville Wesleyan College

Abstract

The purpose of this study was to collect, analyze, and interpret information obtained by questionnaire from administrators and members of boards of trustees in church-related colleges in Oklahoma relative to the use of federal aid in such colleges.

Of specific concern was the difference between administrators and board members in favorable inclination toward federal funds. Of the 305 board members and 116 administrators in eleven church-related colleges in Oklahoma which are regionally accredited or accredited by the Oklahoma State Regents for Higher Education, some 107 administrators and 214 board members or trustees responded to the instrument.

The instrument, a Personal Reaction Scale, was comprised of twelve stimulus statements about federal aid. These statements dealt with (1) tax-exempt status, (2) assistance to veterans, (3) surplus property, (4) loans for physical facilities, (5) loans to students, (6) work-study programs, (7) grants for libraries, (8) grants for physical facilities, (9) grants to students, (10) funds for operational expense, (11) funds for sectarian programs, and (12) funds for the establishment of new church-related colleges.

Each successive set of three statements was grouped into a category of either (1) federal programs in effect prior to 1958, (2) federal loans or work-study programs, (3) federal grants, and (4) projection of future federal aid to church-related colleges. The statistical technique used to test the difference significance was the analysis of covariance. Three variables suspected of influencing responses were controlled: age of respondent, length of service in the specific office, and educational level. At the .05 level the null was rejected on all statements. At the .01 level significant differences were found on all except statements 1, 10, and 12 and category A. The more favorable attitude was held by administrators.

Title:	Application of the Semantic Differential and Item Sampling Techniques to Assessment of Campus Environments
Researcher:	Gaylen R. Wallace, Director of Research
Institution:	University of Tulsa

Abstract

The objectives of this grant were to review selected research literature for information dealing with the assessment of campus environments and to develop and recommend a model for applying the item sampling techniques to assess campus environments.

A graduate student conducted the systematic review of literature related to the topic and assisted in selecting appropriate ideas therefrom to apply to the techniques used in this project.

From the results of this review, a model was generated. The model proposed the application of the Semantic Differential and matrix sampling techniques to the assessment of campus environments. The model developed appeared to be unique in relation to existing literature reports.

Title:	An Application of the Valenced Module System to Curriculum Design for the Department of Nursing of Oklahoma Baptist University
Researcher:	Mary White, Chairman, Department of Nursing
Institution:	Oklahoma Baptist University

Abstract

This study proposed to develop a curriculum model that would: (1) enable an interdisciplinary approach to be applied with facility; (2) be flexible enough to allow for continuous revision and updating; (3) be applicable to both didactic and laboratory courses; and (4) be understandable to a new faculty member.

Two faculty and staff curriculum seminars were held which focused on the use and application of the Valenced Module System as a possible tool in curriculum development in a baccalaureate nursing program. A first effort in development and application of the module information system to nurse training content was to ferret out concepts which had commonality and relevance across each of the nine problem models which make up the formal courses for the nursing major. In addition to health education orientation, the nine problem models are generally the chronically ill adult, the immobile child, the acutely ill adult, the acutely ill child, the adult with distorted communication, the multi-problem family, and leadership. Some thirty such concepts were identified and reorganized with the following curriculum content strands: Ecology, Family, Growth and Behavior, Nutrition, Leadership, Professional Heritage, Pathophysiology, Skills, and Research.

A matrix was then prepared to show relationships between the strands and the problem models. Strands were divided into concepts which are applicable to each model. This made the curriculum visible in terms of applicable problem models, strands, and concepts.

Another workshop was held on the valencing process. This process relates each concept to each problem model and each problem model to each other forming a module of interrelationships. This was continuing.

A consultant, Mr. Vic Jackson, helped write a proposal for further funding of the curriculum revision for which funds were sought.

Title: Aspects of Osmotic Response in Crayfish from Waters of Differing Ionic Composition

Researcher: Buena S. Ballard, Associate Professor of Biology

Institution: Southwestern State College

Abstract

The purpose of this research was to make a comparison of osmotic responses and tolerance of crayfish naturally adapted to waters of different ionic composition, principally salinity. Subjects were to be chosen from inland salt-water population and from strictly fresh-water populations. Evidence of sexual differences in osmoregulation were also sought.

Crayfish were collected from fresh water north of Okeene, Oklahoma, and from 7.6 o/oo salt water north and east of Cherokee, Oklahoma. They were maintained in the laboratory in aerated plastic containers at a constant temperature of 23°C. The experimental procedure was to sample blood of four males and four females from their natural water then transfer the remainder to 7 o/oo for 48 hours, sample the blood of four more males and females then transfer the remainder to 12 o/oo for 48 hours, thus increasing the salinity by 5 o/oo increments allowing 48 hours acclimation before taking blood samples. Total blood osmoconcentration was determined with a freezing point osmometer. Blood was collected by inserting a hypodermic needle into the sternal sinus of the crayfish and withdrawing one-half cubic centimeter of blood which was then transferred to the osmometer cuvette. Blood concentration was measured in milliosmoles per liter NaC 1 but was converted to equivalent o/oo sea water for purposes of comparison with the environmental water. Results were plotted on a graph and the data were analyzed.

Both Okeene and Salt Plains populations hyperregulated very well in dilute water. Blood concentrations were maintained above that of the natural environment in both cases. At 7 o/oo the Salt Plains group maintained a higher concentration than the Okeene group, but actually less concentration gradient between their internal and external concentration. Up to about 13 o/oo both populations maintained relatively constant internal concentration. Above 15 o/oo the Salt Plains crayfish adapted better. At 25 o/oo all powers of osmoregulation were inhibited, although the Okeene group stood 30 o/oo for 48 hours. No significant sexual differences were noted.

Title: Attitude Change Over Time as a Function of Ego Involvement, Communicator Credibility, and Number of Exposures to the Communication

Researcher: George A. Letchworth, Assistant Professor of Biology

Institution: Oklahoma Baptist University

Abstract

In the psychological area of attitude change, this study proposed to: (1) review the literature and compile a bibliography; (2) generate some answers and problems which could serve as a basis for a grant application; (3) use M. Sherific method of ordered alternatives to measure attitude change over time; and (4) complete the proposed study.

A review of the literature was completed in which most studies were found to revolve around a program factor being inserted into a situation and measurement made and projected to be a resultant of the experimental variable with no consideration given to psychological variables such as ego involvement.

In this study the experimental design was patterned after Soloman's four-group design. A pre-test questionnaire was administered to approximately 850 students with the experimental subjects selected on the basis of their classifiable responses to the questionnaire. This design allowed the researcher to control a variety of confounding variables for which relationships were hypothesized. During the main study run in the month of April, individuals were exposed to either zero, one, or two communications in a group situation with the availability of a salient reference group as a variable also. The measurements occurred over a four-week span of time.

Effects noted were insignificant besides change in acceptance, rejection, and non-committal which gave credence to the function of ego involvement in attitude change. These comparisons resulted from measurements of subjects involved in the groups totaling 252. Seven students were employed directly in the project.

Title: Background Study for Archaeology Research Project

Researcher: Ward Weakly, Professor of Sociology-Anthropology

Institution: University of Tulsa

Abstract

The objective of this project was to investigate ways of involving school dropouts and potential dropouts in archaeological field research. Of major concern was the involvement of American Indian youth of lower socioeconomic status in an urban situation.

Discussions were initiated with the Tulsa area Community Action Program, Model Cities coordinators, the Concentrated Employment Program, Oklahomans for Indian Opportunity, the Tulsa Independent School District, the Mexican-Indian Alliance, the American Indian Alliance, and the Tulsa Indian Center. These agencies offered assistance in locating and recruiting potential program participants.

Determination was made that enough potential participants would be available to start a program with fifty students. To make the program consistent with reaching the selected minority groups, determination was made, also, to accept only Indians of one-quarter or more American Indian background.

Discussion continued between Tulsa University personnel and personnel from the Community Action Program (CAP), the Upward Bound program, and the Manpower Development and Training Administration. Several individuals in CAP and in some of the Indian groups volunteered to serve as non-paid consultants and some as tutors.

As a result of this project a paper was presented to the Society for American Archaeology meeting in Milwaukee, Wisconsin. An Upward Bound proposal was completed, also, entitled "Upward Bound Program for Disadvantaged Indian Youth in the Tulsa Metropolitan Area Through Tutoring and Archaelogical Field Experience" and was submitted to the Office of Ecnomic Opportunity. Included in the proposal was a detailed list of equipment needed to complete the field project.

Title: A Case Study of Teacher Preparation in Data Processing in Oklahoma

Researcher: Mary L. Elliott, Business Instructor

Institution: Central State College

Abstract

The intent of this study was to reveal aspects of data processing curricula so that certain hypotheses could be formulated relative to the future of teacher preparation. Two major areas of concern were:

(1) What kind of education does the business data processing teacher need?

(2) How should the education necessary to prepare business data processing teachers be provided?

An interview guide was developed and used in conducting interviews with business data processing teachers in high schools, area vocational schools, junior colleges and four-year colleges in Oklahoma. Questions dealt with subject matter, equipment, enrollees, teacher preparation, problems and changes, and recommendations.

On curriculum and equipment the respondents agreed that "hands-on" experience was important in the learning situation, that objectives of two-year college and private business programs were similar, but four-year college programs varied with objective, and that adequate textbooks were lacking, but seemed to be improving.

Most schools used some student selection process--IBM aptitude tests and counselor recommendations. Most enrollees are interested in the employment opportunities. The majority do not have on-the-job experience at completion of the program. Ambition, creativity, logical thought, curiosity, and imagination were marks of success for data processing students.

Teachers had master's degrees. Experience varied from one to 19 years, with three to five years teaching of data processing. Half had industry experience, others office or accounting in data processing. Industrial data processing had good subject matter training, but lacked communication skills, educational psychology, and student motivation skills.

Common problems seemed to be communications, textbooks, facilities and teacher preparation. Recommendations concerned keeping knowledge updated after an initial training.

Title: Cassette Taped Correction of the Composition of
Tricultural, Remedial English Students

Researcher: Nancy Lee Mack, Language Arts Instructor

Institution: Bacone College

Abstract

In preparation for grammar and composition curriculum revision, a study was done of the use of cassette tapes and grading charts with forty different categories to discern and correct errors in student writings. Objectives involved student correction of own errors, more faculty-student conferences on composition, and an improved instructor-student rapport in the classroom.

This part enabled remedial English composition students--10 percent Negro, 40 percent American Indian (many bilingual), and 50 percent Caucasian--to utilize a specially designed cassette tape recorder table in the Bacone College library to play their self-purchased cassettes upon which English instructors commented on grammar, organization, and interpretation of their themes and research papers submitted throughout the semester. Each student recorded his errors on the error chart, recorded his grade, and recorded other comments of the instructor as he listened to the tape.

At the end of each semester, a study was made of the frequency of errors. The major areas of errors with the number of the 132 students making them extensively are as follows: organization of theme, 83; paragraph unity, 81; paragraph development, 102; spelling, 111; paragraph needing topic sentence, 76; transition between paragraphs, 64; idiom, 109; level of diction, 121; tense inconsistency, 93; punctuation, 123; and sentence fragments, 71. This study was made from each student's own recording of his errors and from the instructor's records. These would be the errors to be stressed in future courses.

An additional activity encouraged Indian students with acute difficulties with idiom and sentence structure, as well as Negro students whose writing reflected dialect differences, to make their own cassette tape during discussion with the instructor. This the student then took to the library, and, while listening to his own reasoning on errors, rechecked the paper.

Although the project did not decrease the number of errors because there were six different writing exercises, the fact that the errors varied more within the forty categories than they remained the same gave hope for improvement over a greater time span.

Title: Cassette Tape Recorders Versus Laboratory Equipment
in Systems of Psychology

Researchers: W. R. Altmiller, Chairman, Education-Psychology Department
Roy T. Maxwell, Professor, Education-Psychology Department

Institution: East Central State College

Abstract

The purpose of this study was to investigate students' voluntary use of cassette type audio tape recorders which they operate themselves to replay material as opposed to use of tapes in a language laboratory setting where they have no opportunity to replay materials. The effectiveness of learning between the two situations and satisfaction in learning experiences in the Systems of Psychology class were also to be tested.

A spring semester was chosen for the initial project. Study materials were prepared and made available on cassette audio tapes and on regular audio tapes (the latter for use in the language laboratory). Because of delays in obtaining the cassettes and in preparing them, students had already established habits of study using study materials in printed form. After the first two weeks the laboratory equipment was not used on a voluntary basis by any of the students.

During the next spring semester two faculty members were assigned to the project. Students took more advantage of the cassettes or written materials than of the language laboratory. There was an increased use of discussion groups not to get factual information as before but to discuss personal and theoretical implications of the materials. Dropouts became less than for psychology courses as a whole. Student enthusiasm and participation was considerably better.

Basically the study found:

1. Students did prefer to use cassette type audio tapes where they could operate them rather than use laboratory facilities.

2. Learning efficiency did not seem to be related to the use of either language laboratory equipment or cassettes.

3. Students reported more satisfactory experience with the cassettes and they voluntarily used them more frequently.

Title: Changes in Composition of the Fish Fauna of the Arkansas River in the Tulsa Area

Researcher: Hague L. Lindsay, Jr., Associate Professor of Zoology

Institution: University of Tulsa

Abstract

The objectives of this research were to sample the fish population of the Arkansas River above and below Keystone Dam to determine the species which occur there now and the relative abundance of these species in the river. Comparison of this information with information gained in collections made prior to the Keystone impoundment would provide an indication of change in fish fauna composition.

With help from four student assistants, Warren Adams, Jerry Mashburn, John Green, and Hoyt Smith, collections were made at twelve sites along the river. Some of the sites were collected several times throughout the winter and spring to detect seasonal variations. A total of twenty-one individual collections were made. The sites ran from the Oklahoma-Kansas border to point on the Arkansas River below Muskogee. Most were taken between the Keystone Dam and Coweta, Oklahoma.

Results showed changes had occurred. First, the total number of fish in the river below Keystone Dam was reduced from the total number before impoundment. The total number above the lake seems not to have been affected so much, and collections made near Ralston, Oklahoma (far above the Dam) were much like collections made several years ago at Tulsa. Secondly, below Keystone Dam certain species have been almost completely extirpated. The same species are still extant and in some cases abundant in the river above Lake Keystone. The plains minnow which was at one time the most abundant species taken in samples from the Sand Springs-Tulsa-Bixby localities was found essentially extinct in those areas. The Arkansas River shiner, although still abundant in collections taken upstream from Keystone Lake were found very rarely in the river at Tulsa. Carp suckers, channel cat, the silver chub, and the speckled dare were rarely found at Tulsa whereas before Keystone impoundment they were fairly common. Thirdly, some species were found increased at Tulsa, namely the river shiner (Notropis blennius) and the sand shiner (Notropis stramineus) the latter of which was previously thought to be more of a creek species than a large-stream fish.

Title: Community Status Differentials Among Oklahoma City Area Suburbs as a Factor Influencing Selected Local Elections

Researcher: David R. Morgan, Assistant Professor of Political Science

Institution: Oklahoma City University (Institute of Metropolitan Studies)

Abstract

The research objective was to investigate the degree to which socio-economic characteristics of suburban communities in the Oklahoma City metropolitan area are related to outcomes for both partisan and selected non-partisan elections over the past 12-15 years. The hypotheses guiding the research were: (1) high community socio-economic status will be positively related to percent Republican vote for presidential and gubernatorial elections; (2) high community socio-economic status will be positively associated with percent "yes" votes on selected statewide bond issue elections. Data from the State Election Board for the Oklahoma City area suburbs of Nichols Hills, Village, Norman, Warr Acres, Bethany, Edmond, Midwest City, El Reno, Del City and Yukon was collected for the following elections:

1. Presidential elections for 1956, 1960, 1964, 1968;
2. Gubernatorial elections for 1954, 1958, 1962, 1966;
3. Five statewide capital improvement bond issues (1960-1965);
4. "Right-to-Work" election, 1964; and
5. Statewide sales tax election, 1965.

Correlational analysis was used for the variables: median family income, education, median value owner-occupied dwelling units; and professional, managerial, or sales occupation. A considerable variation existed among the suburbs in regard to voting patterns, both for partisan and non-partisan elections. The differentiation was associated with community social characteristics as hypothesized. Correlated variables identified accounted for a rather high percentage of the variation in the elections. Above all, education was found to contribute most to the relationship which existed between all the independent variables and election outcomes. The results were incorporated into a University of Oklahoma dissertation "Suburban Differentiation and Metropolitan Political Integration" 1969.

Title:	A Comparative Analysis of Attitudes of Students Taught Introductory College Geography by Closed-Circuit Television and the Classroom Discussion Method
Researcher:	Joe V. Sims, Assistant Professor of Geography
Institution:	East Central State College

Abstract

The research objective of the project was to determine if there were a statistically significant change or difference in student attitudes toward introductory college geography as a result of having been taught by closed-circuit television as opposed to the classroom discussion method.

A semantic differential attitude instrument (based on Osgood's technique) was administered to each of the 125 student subjects at the beginning and end of the semester. The data yielded by the instrument was composed and analyzed to determine if statistically significant changes or differences resulted. The *t* test was used to determine if there were statistically significant differences in the attitudes of the two groups at the .05 level of confidence. The results indicated no statistically significant change or difference in the attitudes of students who were taught by the two instructional methods.

Therefore, closed-circuit television produced no attitude changes not produced in classroom discussion in introductory geography other than those changes which could be attributed to chance.

Title: A Comparative Analysis of Student Perceived Intracollege Environments at Oklahoma Panhandle State College

Researcher: Ted R. King, Assistant Professor, Earth Science

Institution: Oklahoma Panhandle State College

Abstract

Objectives of this project were to compare and contrast the undergraduate division environments, to gain some understanding as to how student perceived environment differs from division to division, and to investigate the extent to which non-intellectual factors in the environments differ at Oklahoma Panhandle State College.

With the George G. Stern, College Characteristics Index, three hundred and fifty-two junior and senior full-time resident students were inventoried. This number (352) comprised 26 percent of the described population.

Student responses were collated, transferred to IBM cards and taken to the computer center at Oklahoma State University. The facilities of the center were used to run an analysis of variance program and to use the Duncan technique to test for differences among the groups.

The findings were being evaluated and were incomplete at this writing.

Title: A Comparison of Two Measures of College Environment

Researcher: Marion L. Olson, Education Teaching Fellow

Institution: University of Tulsa

Abstract

Based upon the premise that colleges and universities have unique climates or environments, this study had as its primary objective the comparison of two measures of college environment, the College and University Environment Scales (CUES) and the Transactional Analysis of Personality and Environment (TAPE). Investigation was made of the relationship between the 52 TAPE scales and the 5 CUES scales of practicality, community, awareness, propriety, and scholarship. The degree of relationship between these scales and sex and major academic program were also investigated. The aggregate judgement of college students was assumed to be able to provide an opinion poll to describe the campus atmosphere.

Population for the study was 800 full-time junior level students at the University of Tulsa. A random sample of 100 subjects was drawn from this population with proportionate representation according to sex and major academic program. The entire sample, without replacement, filled out and returned the CUES and TAPE questionnaire during a three-week period.

TAPE data were subjected to factor analysis, but the scales did not cluster so a multiple correlation model was used to test the fifteen hypotheses. Correlations were considered significant if they reached the one percent level. Conclusions were that:

1. The TAPE scales did not appear to measure the same perceptions as CUE's "practicality" for the total sample when classified for sex or major academic program.

2. TAPE scales measured some of the same perceptions as CUES "community" for the total sample. They were less informative when classified for major academic program.

3. TAPE measured many of the same perceptions as CUES "awareness" when the total sample was classified for sex--less informative for major academic program.

4. TAPE related well to "scholarship" for both classifications.

5. TAPE did not relate to "propriety" for either classification.

Submitted as a dissertation at the University of Tulsa, 1969.

Title: Computer Assisted Counseling

Researcher: Gaylen R. Wallace, Director of Research

Institution: University of Tulsa

Abstract

The objective of this project was to conduct a review of selected computer assisted programs in counseling. From the selected review representative projects were to be chosen.

Representative projects so chosen were then described in annotated form from the information available in the published article. The annotations were then organized and sent to the press.

Title: Computer Science Curriculum Development

Researcher: George E. Atkins, Jr., Director of Computer Science

Institution: Southwestern State College

Abstract

The objective of this project was to develop materials for a FORTRAN-based undergraduate course in computer science, Data Structures.

Project activities began with a survey of current literature relating to the content of the course. An annotated bibliography of 29 sources selected as supplemental texts for the course was produced.

Next a description of course content and an outline were constructed. The course was designed in four major parts as follows:

- I. Basic Concepts
  - A. FORTRAN Review
  - B. Data Concepts
  - C. Character Strings and List Processing
- II. Linear Lists
  - A. Sequential Allocation
  - B. Linked Allocation
  - C. Arrays and Orthogonal Lists
- III. Tree Structures
  - A. Basic Concepts
  - B. Threaded Binary Trees
- IV. Sorting, Searching, and Symbol Tables
  - A. Basic Sorting Concepts Review
  - B. Sorting and Searching in Data Structures
  - C. Symbol Tables

After the course outline activity, four computer programs illustrating programming techniques to be used as a guide for instructors were developed. Programs developed included "Basic Symbol String Manipulation," "Polish Notation and the Tree of a Formula," "Polynomial Arithmetic," and "Topological Sorting." These four remain available for interested persons.

The course developed was planned to be offered at Southwestern State College for juniors or seniors in Data Structures.

Copies of the final report and the four FORTRAN programs developed were disseminated to forty computer science educators in the higher education institutions throughout Oklahoma.

Title: Curriculum Model for an Interdisciplinary Course in Business Communication

Researcher: E. Paul Alworth, Head, Department of English

Institution: University of Tulsa

Abstract

The objective of this study was to develop a model business communications program based on interdisciplinary approaches involving semantics, logic, and linguistics.

The course for which this was a preparation was entitled "Communications for Business and Industry."

A search through the literature of Business Communications, including the areas of semantics, logic, and linguistics, was undertaken to discover current ideas, philosophies, and material which would be adaptable to the course in question. Generally, the difficult task of bibliographical search was done through regular library sources.

Mr. Lloyd B. Lacy, an associate in the project, found and reported more than 2,000 entries relating to Business Communications. Much of this material was utilized in developing the plan and program for the new approach on Business Communications theory.

The new communications course replaced the old courses of "Business Letter Writing" and "Business Report Writing" whose studies of models were fast losing ground in competition with other techniques utilizing computers, punched cards, pre-printed business forms, and other coded devices. The course became a two-meeting-a-week course with fifty-minute lectures by communications professors, spiced with double length workshops conducted by graduate assistants. The workshops consisted of informal discussions of text material, films, and cases in communications.

Title: Developmental Program for Teacher Aides

Researchers: Carl Downing, Associate Professor of Elementary Education
Mack Wedel, Associate Professor of Education
Obed Waters, Assistant Professor of Math
Joy Beaver, Assistant Professor of Education

Institutions: Central State College
Bethany Nazarene College

Abstract

Objectives for this study were: (1) to allow college personnel opportunity to organize a teacher aide program to meet requirements specified by enacted legislation; (2) to determine basic administrative procedures for a teacher aide program; (3) to determine if a teacher aide program provides college students with an insight into the responsibilities and activities of the teaching profession; (4) to determine if better professional rapport is developed between college personnel and public school personnel. To achieve these objectives, Student Education Association personnel were organized and made assignments of teacher aides to the Millwood Public School System. Although the proposal indicated assignment to other schools, the one school received all aides for convenience and to prevent delay in assignments. Planning and coordination at Millwood determined the use of the aides. Evaluation was also planned.

Changes have occurred as a result of the accomplishment of the objectives. First, the student teaching office revised teacher aide policies as a result of this study and with the contributions of two other projects in the area. Second, basic procedures for administering a teacher aide program have become part of the educational processes at Central State College. Third, an analysis of responses by college students shows a developed insight into the teaching profession. Illustrative is a statement by an aide, "I am going to change my major." "I didn't know it would be so exciting." Fourth, as a result of better professional rapport developed between college and public school personnel, two Central State College professors and two administrators of Millwood Public School are cooperating on other projects.

Title: Development of a Biotelemetry Field Receiver
to be Used in Tracking Animals

Researcher: Hobart F. Landreth, Associate Professor of Biology

Institution: Southwestern State College

Abstract

The objective of this project was to build a field receiver to monitor movements and functions of rattlesnakes and to calibrate emitted radio signals for heart rate and body temperature. A small portable AM radio was built and equipped with a crystal converter and field strength meter to be used to detect rattlesnakes in the field. A small directional antenna was constructed to make locating the animals much easier. The basic transmitter was converted to a transducer by adapting the circuit and including thermistors. These then were calibrated to record temperature. The signal strength depended upon the temperature of the organism. An economical way was not found to monitor heart rate, so this objective was dropped.

The field receiver proved very sensitive and very functional in the field. It was light in weight and easy to handle. The antenna system, including field strength meter, too, appeared to be very functional. All that was left to do to complete the project was to calibrate the circuits before placing the devices in the experimental animals. Two students were involved in developing the devices and many others benefitted from the derived instruction.

Civic organizations in Weatherford and Clinton were entertained by luncheon speeches on the project subject matter. One presentation was made at a graduate seminar for the Zoology Department at the University of Oklahoma. One of the students involved, E. Norbert Smith, presented a paper, awarded the best student paper, at the Tri Beta District Meeting, University of Oklahoma Biological Station at Lake Texoma.

Title: Development of a Disguised-Structured Attitude Scale to Measure Attitudes Toward Labor Unions

Researcher: Joseph E. Trimble, Assistant Professor of Psychology

Institution: Oklahoma City University

Abstract

The primary purpose of this study was the development of a disguised-structured attitude scale to measure attitudes toward labor unions. The instrument was to be developed as a means of screening prospective personnel for situations in which an anti-union or pro-union attitude would affect the effectiveness of the individual.

The development of the scale was accomplished with the combination of several scale construction techniques. Based upon definition and review of literature on scale construction and, in particular, measurements of attitudes toward labor unions, the decision was arrived at that a disguised-structured instrument held the most promise for measuring attitudes toward labor unions. In the item selection phase, Mr. Richard S. Greer, an associate for the project, used 171 subjects from two groups with assumed opposite positions toward labor unions--members of five local labor unions and members of the Associated Industries of Oklahoma and the industrial committee of the Oklahoma City Chamber of Commerce. Other subjects were from classes at Oklahoma City University. Statements were made and handed to subjects for them to act as judges as to whether the statement favored unions or not.

Items were classified as "anchor" if both "pro" and "anti" respondents placed it in either favorable or unfavorable categories alike. "Displaceable" items were those statements which were placed at different ends of the scale by the different groups.

In the criterion phase, 62 subjects rated 40 items. For the final scale, 36 items were selected and placed in a Thurstone method of scaling. The methodology of having subjects judge statements from unfavorable to favorable on an imposed categories judging system produced a more reliable and valid attitude scale than other previous union attitude scales.

Title: Development of Aids for Teaching Professional Writing to Business Teachers and Teacher-Trainees

Researcher: Bill G. Rainey, Chairman, Department of Business and Economics

Institution: East Central State College

* * *

Abstract

The educational objective was to develop materials to be used in training business teachers and teacher-trainees in the techniques of writing for educational and trade journals. Underlying this objective was the objective of exploring professional writing by teachers in regard to its advantages for: (1) teachers themselves, (2) students in their classes, (3) their school, and (4) their profession, with particular emphasis on business education.

Information about business education research and writing was gathered by reading the literature, by interviewing educator-writers personally, and by correspondence questioning of noted business education writers at both the college and high school levels. Information for a handbook on business education writing was gleaned in the process. Three videotapes were prepared, also. The tapes and the handbook will be used in teaching a short course or unit on "Writing for Professional Journals."

Information was collected from 116 teacher-authors. Their material, plus the tremendous amount of material obtained from books and articles on professional writing was far more than originally expected.

The compilation of material for the handbook and the three tapes, plus the possibility of two more made a wealth of information on the subject which will be available to the profession.

Title: Development of an Experiment Oriented Course in the Physical Sciences for Non-Majors

Researcher: Don Kellogg, Instructor of Physics

Institution: East Central State College

Abstract

The objectives of this project were: (1) to develop a proposal requesting support for the research, planning, and development of an experiment oriented physical science course; (2) to develop a film-loops series for use in the course; (3) to develop an inexpensive student experiment kit containing materials for approximately twenty take-home experiments; (4) to use the materials in class situations; and (5) to collect experimental data from these classes.

A pilot model of the course was used in two classes at East Central State College and in two classes at the University of Oklahoma. Total enrollment in these four classes was approximately 225. Several film loops were produced at East Central State College and used in the courses. Interested students helped in making the finished film loops, and a great deal was learned about techniques for producing fine quality film loops.

Students, also, were quite enthusiastic about the materials, and many were eager to use their own time to help in the planning and development of the kits. The kits can be produced locally for about $3 each and will last two or three years.

Although the U. S. Office of Education and the National Science Foundation were querried in regard to funding further study of the project, neither proved fruitful. Student reaction to the materials was explored at both institutions. The most encouraging factor in the whole project was the student response to this type of learning. Student interest level was found to be much higher among those who were participating in the experimental program as opposed to those in the traditional course.

Title: Development of Audio-Slide Presentations in Freshman Chemistry

Researcher: Hubert E. May, Associate Professor in Chemistry

Institution: Oral Roberts University

Abstract

This study aimed to prepare audio-slide presentations of selected subjects in freshman chemistry for classroom and library use. Evaluation of the feasibility of a longer term project, perhaps collaborative in nature, was also conducted.

Programs of audio-slides were devised for the following:

a. Control of a Chemical Reaction
b. The Rate of a Chemical Reaction
c. How to Derive A Rate Equation
d. Chemical Equilibrium from the Kinetic Point of View
e. How to Study the Mechanism of a Chemical Reaction Using Kinetic Techniques.

Programs on inorganic qualitative analysis turned out to be infeasible because of a photographic problem. An attempt was made to photograph chemical reactions in test tubes to record appearance of reactions students were asked to observe; however, the pho·ographs were unsuccessful.

Development of such programs was time consuming and much more difficult than appeared in the proposing of the activity. The idea, however, was a worthwhile one, and although not as many programs were produced as desired or anticipated, the basic idea of the project will be continued in an ongoing effort utilizing the Pentax Spotmatic Camera with Macro F 4 Takuman Lense and Extension Bellows purchased in this project. The project director hoped to expand into the fields of organic and inorganic chemistry, also.

Title: Development of Audiovisuals for Enriching the
Home Economics Curriculum

Researcher: Anita F. Reynolds, Home Economics Instructor

Institution: Bethany Nazarene College

Abstract

The educational objective of this project was to develop audiovisual materials for enriching the home economics curriculum at Bethany Nazarene College in the following courses: clothing selection, clothing construction, interior decorating and family relations.

A slide series and transparencies were developed for instruction in clothing selection. The set of fifty-five slides illustrate the art concepts as related to fashion design and selection. A taped script to correspond with the slides was also developed. For family relations, an additional set of eighty slides and a taped script entitled, "Goals of Modern Marriage," were developed. A set of twelve slides and several transparencies illustrating creativity in home decorating, storage suggestions, and visuals of various periods of furniture were developed for interior decorating. Single concept film loops were developed to illustrate clothing construction skills. Two skill areas are "bound buttonhole techniques" and "construction finishes for modern fabrics."

A concurrent survey of the audiovisual equipment holdings in each department at Bethany Nazarene College revealed a need for continuing this project. It has also lead to investigation and suggestions for improving instructional methods in other subjects through the Educational Policy Committee.

Pre and post-tests were developed and administered to both the clothing selection and family relations courses. In clothing selection, the post-test scores were 14 percent higher over the pre-test scores, while in family relations, the post-test scores were 19 percent higher over the pre-test scores. A Slide-Tape Series Evaluation was administered to both clothing selection and family relations classes. Comments from students were very favorable for the slide-tape audiovisual method of instruction.

Title: The Development of New Techniques for the Teaching of Slaughter Lamb Evaluation

Researchers: Ted H. Montgomery, Assistant Professor of Animal Science
Kenneth P. Woodward, Instructor of Animal Science

Institution: Panhandle State College

Abstract

The objective of this study was to develop a new technique involving the use of visual aids which would illustrate the relationship between the live lamb and its carcass.

To fulfill this objective several lambs were slaughtered which represented different degrees of finish and muscling. Two lambs, one representing a properly finished heavily muscled lamb and one representing an overfinished heavily muscled lamb were selected for the illustrations. Several measurements and photographs at different angles were taken of these live animals. The lambs were then slaughtered and frozen in a standing position. These frozen carcasses were then cross-sectioned at identical locations and photographed. The slides developed were arranged in a progressive comparative sequence and a brief script written to accompany the presentation of the slides. The contrast in finish between the two lambs used visually illustrate the relationship between the live lamb and its carcass. The measurements taken of the two lambs are verified by the illustrations.

Use of the slides in explaining this relationship to high school and college students has been very effective. Six students helped in developing the final data and 45 students initially observed the presentation of the slides. Comments of area vocational agriculture instructors, county agents, and others indicated that this project was very worthwhile. The set of slides showing the two lambs has been available upon request from either of the two investigators.

Title: The Development of Remedial Learning Materials for Introductory Geography

Researchers: Dale Hassinger, Professor of Education, and
Lee D. Jones, Instructor of Geography

Institution: Southwestern State College

Abstract

Aim of this proposal was development--development of supplementary learning materials on audiotapes so that students' remedial learning could be done outside of class rather than in regular class activities and development of a proposal for other funding for further material development and evaluation.

Three units of an introductory geography course were selected: (a) The Earth and Its Setting; (b) The Ocean; and (c) The Changing Face of the Earth.

In two sections of the course, the instructor analyzed tests, recorded questions asked in class, and interviewed individual students to identify the most common deficiencies in concepts, skills, and terminology requiring remedial instruction. Remedial materials were then prepared, consisting of special audiotapes of lectures and illustrative printed materials. Students enrolled in two sections of geography were pretested over background knowledge related to unit (a). Those scoring in the lowest quartile were directed to use the remedial material outside of class during the period of instruction. On units (b) and (c) all students were permitted to use the tapes on a voluntary basis. Of the twenty students who used the tapes in unit (a), 25 percent scored in the upper quartile, 55 percent scored in the upper half, and 70 percent scored above the lowest quartile on the regular unit quiz. A total of 30 percent of the students in the two sections used the tapes in the last two units.

Test data on these last two units were inconsistent. On unit (b) sixteen students used the tapes--eleven moved up in class rank, five moved down. On unit (c) twelve moved up in rank, seven down. The taped materials needed to be refined and subjected to further tryout before definite conclusions could be drawn.

Title: The Design and Construction of a Portable Coring Drill and An Apparatus for Orientating the Core

Researcher: Lanny Joe Reed, Physics Instructor

Institution: Northeastern State College

Abstract

The objectives of this project were to design and construct a portable coring drill and an apparatus for orientating the rock core. The equipment was then used to obtain core samples from near faulted regions in northeastern Oklahoma. The direction of the axis of magnetic susceptibility were determined, and the relationship of these directions to the geometry of the faulted zone studied.

The portable coring drill was assembled consisting of a portable power plant, a half-inch electric drill, and a diamond coring bit. Fluid for cooling the bit is supplied under pressure by a garden sprayer. A torsion balance magnometer was constructed and calibrated to measure anistropic magnetic susceptibility.

From a fracture zone in Boone Limestone in Cherokee County, Oklahoma, at the northeastern end of the South Muskogee Fault four core samples were obtained of rock in a zone of apparent fault drag. A thin disk orientated perpendicular to the trace of the fault was cut from each core. The samples were suspended from a fine fiber between a pair of Helmholtz coils whose axis is horizontal. Deflections of the system were produced by passing an alternating current through the coils. The torque curve was determined by rotating the coils about the suspended sample and determining the deflections at various angles.

A change in orientation or direction was observed between samples from the "drag" region as compared with samples from the "undeformed" region. Tentatively the change was concluded to be related to a flow movement of the matrix material. More samples from this region need to be analyzed before a firm conclusion can be drawn.

Title:	Determination of the Proper Location for Courses in Statistics at Central State College
Researcher:	Bobbye Persing, Associate Professor of Business Administration
Institution:	Central State College

Abstract

This study proposed: (1) to determine the historical pattern and present character of statistics course location in institutional frameworks; (2) to assess interests and opinions of Central State College statistics teachers; (3) to survey similar institutions about their structures and opinions concerning those structures; (4) to review and summarize data and draw conclusions leading to a recommended local arrangement; and (5) to determine an expansion of the study into a form generalizable to institutions different from Central State College is warranted.

The historical pattern and present status of the disciplinary location for statistics courses in institutions of higher education were determined through a review of the literature and a survey of fifty-six institutions. The interests and opinions of Central State College statistics teachers and chairmen were assessed through two group meetings, individual conversations, and their completion of survey questionnaires. Two consultants were hired for the second session. The committee of teachers came from business, economics, education, mathematics, psychological statistics, and interested other places. The survey of fifty institutions yielded an estimate of the present design. The review and summarization of the data led to the conclusion and recommendation that for the present, the teaching of statistics at Central State College should continue to be decentralized, but that a continuing body to coordinate and study statistics teaching and alternative plans should be established. The study is not generalizable to others, but the data is useable.

Title: Differential Learning Strategies

Researcher: Carl Oliver, Acting Dean of Education

Institution: University of Tulsa

Abstract

The objective of this search was to investigate, define, and describe existing learning strategies as presented in educational literature. One graduate assistant was employed to search the literature. The result of the project was a paper, "Differential Learning Theories."

Title: Ecology of the Anadarko Heron Rookery

Researcher: Myra Baldwin Lamb, Instructor of Biology

Institution: Oklahoma College of Liberal Arts

Abstract

This study proposed to involve students in the following activities: (1) a census of floral and faunal species of the Anadarko Heron Rookery; (2) collection of data on migrant bird arrival and departure; (3) information about feeding habits of residents; (4) compilation of records of successful nesting species; (5) banding of migrant birds; (6) formal report of personal research activities by each student; (7) confirmation of nesting of Cattle Egret and Glossy Ibis.

A blind was constructed above tree-top level so that observation of the nesting area was ideal. The blind was occupied daily during the early morning and late afternoon hours when rare species were active. This study continued during the entire nesting season.

All the taxonomic and environmental data proposed for collection were compiled and most of it used in the personal research activities papers which the ten students presented. Some specimens were preserved. A few juvenile birds were banded. The Cattle Egret (Bubulcus Ibis) was established as having extended its range westward to the Anadarko area for some eleven pairs successfully brought off young in the rookery. Prior to this, the Cattle Egret had not been identified as nesting farther west than Tulsa and then only rarely nesting in any part of Oklahoma. The Glossy Ibis (Plegadis Falcinellus) was seen repeatedly but not proven to be nesting.

A photographic record was attempted but since all were unskilled photographers, the results were unstaisfactory or of limited value. The research papers submitted by students at the end of the nesting were excellent, however, and some students submitted more than one study.

Title: Educational Issues in the Oklahoma Legislature (1961-1967)

Researcher: J. Allen Singleton, Assistant Professor, Social Science

Institution: Southeastern State College

Abstract

The objectives of the project were to determine the availability and collect materials necessary to conduct an analysis of the State Legislature's roll-call votes and to evaluate that data to determine patterns of voting behavior related to education issues. This data then would be compared with other roll-call voting patterns during the period 1961-1967. When completed, this study would serve as a guide for a larger regional comparative study.

To collect all necessary data and compile materials, three trips to the State Capitol and the libraries of the University of Oklahoma and Oklahoma State University were made. The most difficult aspect of the project was the preparation of the data for use. Mr. Jimmie O'Steen cooperated in writing a program for his computer facilities at Southeastern State College to handle the data. The program presents the history of each piece of legislation introduced into each session according to: (1) what happened to it during the course of its legislative history; (2) the actions of each member of the Legislature in terms of legislation introduced; (3) what each committee did with the bills referred to it by members and by action; and (4) how each member voted on roll call in relation to the voting actions of every other member. Despite the difficulty of this last aspect, one session (31st) of the Legislature has been placed on data cards and processed for the tabulation indicated.

Two students worked on the project. One in particular was trained for the encoding of the data. This study became the subject of a paper presented to the Oklahoma Academy of Science annual meeting.

Title: The Effectiveness of Reducing Disease Potential by Sewage Treatment

Researcher: Gary Dean Wolgamott, Assistant Professor of Biology

Institution: Southwestern State College

Abstract

The objective of this research program was to determine the effectiveness of sewage treatment in reducing the numbers of enteric Escherichia coli (E. coli). The Weatherford sanitation plant was the location of this investigation. The study also sought to determine the effects of sewage disposal on stream pollution by E. coli.

Weekly samples from five different sources were collected in sterile tubes. The sources were influent raw sewage, effluent sewage after treatment, stream water fifty feet above disposal of sewage, stream water fifty feet below disposal of sewage, and stream water one and one-fourth miles downstream.

From February through June samples were collected and filtered. Filters were then placed on absorbent pads saturated with ENDO medium and incubated at 37°C for 24 hours. The medium selects for enteric bacteria, and colonies of E. coli have a green metallic sheen which allows differentiation.

Using E. coli as the test organism as an indication of fecal pollution and possible coexistence of pathogenic bacteria, the results indicated a tenth reduction of these organisms per unit volume during treatment. This suggested that if pathogenic bacteria were present in the influent sewage, only about one in ten will be destroyed during treatment. The remaining organisms were dumped into Deer Creek, a tributary to Cobb Creek, to be diluted and allowed to pass on downstream.

The stream itself accounted for another tenth reduction in the first fifty feet, and another tenth at the mile and one-quarter site. However, the number of E. coli present in the water at this distance was alarmingly high.

This research indicates that sewage treatment at Weatherford, while capable of lowering the biochemical oxygen demand resulting in death of some bacteria, does not destroy or remove enteric bacteria in sufficient quantities to prohibit stream pollution.

Title: Effects of Seasonal Changes in Osmoregulation of the Blue Crab, *Callinectes Sapidus*

Researcher: Buena S. Ballard, Associate Professor of Biological Science

Institution: Southwestern State College

Abstract

The object of this investigation was to determine if a seasonal cycle of changes in blood concentration exists which is independent of temperature. Such a biological rhythm (a reflection of osmoregulatory changes) could be of importance in influencing seasonal distribution of the species. Adult blue crabs were to be maintained in artifical sea water of constant salinity and constant temperature. Measurement of change in total blood osmoconcentration (via feezing-point depression method) was to be made at weekly intervals through a change of seasons.

A major part of the work financed by this grant turned out to be solving the technical problem of maintaining a sufficiently large stock of experimental subjects over a fairly long period of time far removed from their natural marine habitat. With the help of one student in the project, a method was developed with apparent success. A circulation-filtration system was constructed and worked successfully in the latter stages of the research. Only four crabs remained alive at the time the filtration system was completed. Obtaining more crabs was not considered feasible since not enough time remained before summer to carry out the original objective of measuring change in blood concentration through a change of seasons. However, plans were made to continue the project through the succeeding year, using the facilities acquired as a result of the grant.

Title: The Establishment of an Audio-Tutorial General Biology Course - A Preliminary Study

Researcher: Roy D. Dick, Associate Professor of Biology

Institution: Southwestern State College

Abstract

The purpose of the project was to obtain information for the establishment of an audio-tutorial laboratory in general biology and then to do a very limited comparison of conventional and audio-tutorial laboratory practices. Delimited objectives were to obtain a consultant to assist in the development of the audio-tutorial general biology course; to obtain and study materials for use in teaching and evaluating the effectiveness of an audio-tutorial approach to the teaching of biology; and to visit institutions which were teaching courses by audio-tutorial methods.

A general biology course taught during the summer of 1968 was selected for the study. One-third of the laboratory exercises were conducted by the audio-tutorial method, and the other two-thirds were taught by conventional method. The general biology teaching staff visited the botany laboratory at Oklahoma State University which is conducted by audio-tutorial methods. Several audio-tutorial biology programs were obtained and used in the development of this project. Two consultants were brought to the Southwestern State College campus to assist in designing the laboratory. They also advised the staff on types of activities felt most effective for use in the laboratory.

Thirty-three students were involved as subjects of the initial experimental course. Two other students were involved in setting up the laboratory situation. The results obtained from the experimental class indicate a preference for the audio-tutorial laboratory methods, and the results indicate a level of achievement in these laboratories as good as that in conventional laboratories.

Title: An Evaluative Study of the College Mathematics Program of the Langston University Learning Resources Center

Researcher: James R. Ellis, Professor of Mathematics

Institution: Langston University

Abstract

The design of this study was to evaluate the college mathematics program of the Langston University Learning Resources Center. This was to be accomplished by determining relative progress made by students who had used the materials in the center with the progress of those who had not and by comparing the methods and techniques of presentation and evaluation which are being used at Langston with those being used in other centers designed to serve the same general type of student population.

Relative progress was determined by comparison of test scores on a pre-test and post-test basis. "Sequential Tests of Educational Progress" in two forms were used in November and April with College Mathematics sections students in the first and second semesters. Test scores were obtained for 221 of the 234 first semester students, and 184 of the 217 second semester group.

The Learning Resources Center furnished data on 135 pupils who had used the center. Test scores had been recorded on both a pre and post basis for 62 of these students. Another 47 students were identified having both scores, but no record of using the center.

Although progress made by those who had used the center was slightly higher there was no significant difference between the progress of the two groups.

A further study was recommended for the 1970-71 year which would give pre and post-tests in the same semester, use analysis of covariance technique to control for individual differences in ability, and devise some method for obtaining and evaluating student criticism and suggestions for improving the program.

Title: An Exploratory Study of Variables Differentiating Television Teaching from Non-Television Teaching with Emphasis on Depersonalization

Researcher: Ray Quiett, Assistant Professor of Sociology

Institution: East Central State College

Abstract

The major objective was to see what variables were significant in differentiating television learning situations from regular learning situations. Another objective was to see if "depersonalization" were more likely to occur in television instruction than in regular instruction and to explore ways of measuring the difference.

Pre and post tests using the Semantic Differential Scale with three separate comparison groups were employed to investigate part of the differentiating variables. An essay written in class by each student taking the course by television describing his personal feelings and dislikes of instructional television in the field of sociology became a part of the data collected. Comparisons of grade level achievement, ACT scores in the social science section, ACT scores in the composite section, grade point average, mean age, sex differentials, and school-status classification were made. Grade level achievements were compared statistically using the _t_ test of significance. The same type of _t_ test was administered on the pre and post scores of the semantic differential results. Thus, the major objectives were accomplished resulting in a good deal of information.

The statistical tests revealed no significant differences in grade level achievements between the conventional classroom instruction method and the closed-circuit television instruction method with the 367 students tested. Further, it was learned that not very many significant changes in attitudes occurred between students having had a course in Introductory Sociology by television and those who had not. Little further understanding of the role of "depersonalization" in the television instruction method was gained.

Title: An Exploratory Study on An Archaeological Site
in the Verdigris Valley

Researcher: Bob Trammell, Science Instructor

Institution: Seminole Junior College

Abstract

After the investigator became aware of several promising sites containing evidence of early man in an area soon to be converted into industrial sites in connection with the Arkansas River Navigation System, the proposal for this study was drafted. Objectives were to:

A. Preserve important historical or archaeological information which might be found;

B. Give real investigation experience to students;

C. Inclucate students with inquiry as to a worthy learning method.

Three trips were made to the area containing the sites. Surface survey was undertaken and completed with the assistance of eight students from Seminole Junior College and Oklahoma Military Academy. These students were directly involved in the surface survey of the five important sites. They mapped and photographed the sites and reported the finds to the State Archaeological Society at Norman. A paper was prepared on the findings at one of the sites which students helped examine.

Title: Exploring the Comparison of Methods for Teaching Basic Manipulative Nursing Skills

Researcher: Louisa G. Arnold, Nursing Instructor

Institution: Central State College

Abstract

The educational objective of this project was to develop a self instructional program in basic nursing skills to determine if a greater number of students could be taught. This involved: (1) constructing a sequence of progressive, self-learning experiences; (2) adapting the instruction according to individual differences in students; and (3) determining if the student is able to master basic skills without a demonstration by the instructor.

Each student was given study guides for each skill to be mastered. The student selected material from a variety of audiovisual aids demonstrating the skill. Reference books were available in the laboratory for additional information as required. The student was free to return to the audiovisual or reference area, or to use an instructor for a resource person. He demonstrated the skill to the instructor when he felt ready. Mastery was determined by meeting of all criteria on the evaluation sheet.

Results showed students were able to master skills without instructor demonstrations. Instructors were able to give individual assistance, and students who mastered the skill early assisted others.

Some 160 hours of extra laboratory time were utilized by 16 students. As basic skills were mastered, students cared for patients in the clinical area. Patients needs met by progressed students were personal hygiene, positioning, exercise, nutrition, elimination, hot and cold applications, and taking the vital signs.

Title: Feasibility Studies for Initiating Research on Macroinvertebrates of Foss Reservoir in Relation to Water Quality

Researcher: Richard Craven, Instructor of Biological Sciences

Institution: Southwestern State College

Abstract

The research objective was to determine the feasibility of further study of the relationship between macroinverterbrates and water quality as an indication of a lake's productivity. Consultation with others engaged in related activities were accomplished. Equipment, facilities, maps and data were obtained as well as a review of the literature.

Foss Lake was sampled at two intervals (about four weeks apart) at various locations and various depths to determine the presence of macroinverterbrates. No appreciable amounts or numbers of species were obtained in samples, apparently due to the very low quality of the water. This activity does reveal a need for further study of water quality and macroinverterbrate relationships. Particularly needed would be a more extensive look at Foss reservoir over a longer period of time at more locations and even parallel studies of other bodies of water in the same geographic area.

2.

Title: Follow-Up of Dr. Sandefur's Session in the Oklahoma Consortium on Research Development Workshop on Model Research Offices

Researcher: Roy T. Maxwell, Coordinator, Research and Development

Institution: East Central State College

Abstract

The purposes of this study were: (1) to determine if participants who attended the February 23, 1968, Oklahoma Consortium on Research Development Workshop on Model Research Offices had been able to work out their own plans for a research office; (2) to share ideas and discuss problems that may have become evident regarding the establishment of a research office; and (3) to have appropriate experiences that will enable participating members to establish offices and work out any problems related to this.

Two different meetings were held as a result of this project. The first meeting was held in the University of Oklahoma Computer Center in May of 1969. At this meeting, there was a demonstration of the use of GIPSY in researching ERIC abstracts. Discussed, also, were different problems involved in establishing research offices.

A second meeting was conducted on the East Central State College campus in April of 1970, where new problems in establishing research offices were discussed.

Many of the higher education institutions established research offices after Dr. Sandefur's session in February which indicated an effect of the session as had been planned.

Title: Fun with Mathematics and Art: Curve Stitching (Elementary)

Researcher: Janice M. Mathis, Instructor of Mathematics

Institution: Southwestern State College

Abstract

The educational objective of this study was to publish two paperback books, one for elementary and one for secondary, to enable the instructors at these levels to motivate students in the field of mathematics and to observe the close relationship of mathematics and art. A rough draft was prepared for the mathematics faculty to evaluate. After their evaluation and editing, copies were printed and copyrighted. The text, Fun with Mathematics and Art: Curve Stitching, was published on January 15, 1968. It is a manual of curve stitching for the elementary teacher. It contains chapters related to geometric construction, color charts, color sensations, and suggested methods for the elementary instructor to apply curve stitching as an approach to the teaching of mathematics and art.

The psychology department conducted the evaluation procedure in an effort to discover if the text were readable and understandable by the elementary teacher. Two classes of college math were tested to verify readability and understandability which proved valid. A sixth grade class at East Elementary School in Weatherford spent six weeks working with curve stitching. The children were enthusiastic and carried on the activity at home after it was no longer being studied at school.

In conducting a validity and reliability study using the text material in a comparison between two kinds of teaching techniques, Steve Casida, a fellow worker, found the book suitable for either of two given methods of teaching. The secondary edition was delayed by lack of funds and other assistance.

Title: Genetic Contribution in Phenol Oxidase Synthesis

Researcher: E. Edward Peeples, Associate Professor of Biology

Institution: Southwestern State College

Abstract

This project tested the hypothesis that mutation of several different genes in the fruit fly, *Drosophila Melanogaster*, each affect tyrosinase, or phenol oxidase, structure as well as its activity. Further, that eye structure mutants of *Drosophila* may be related in that each are caused by a mutation of a different gene coding for one of the several polypeptides essential to the enzyme.

Procedure involved electrophoresis of extracts prepared from single pupae (puparium formation) of several eye mutant strains of *Drosophila Melanogaster*. Following electrophoresis, proteins in the acrylamide gel were activated. Then a substrate solution of tyrosince, or dopa, layered over the gel permitted visualization of the enzyme by the dark melanin band produced.

Simple test tube assays of tyrosinase were performed by combining tissue extracts with substrate solution and observing darkening of the mixture in the test tube. This latter procedure was performed on extracts of reproductive organs of developing rats as one facet of investigation in conjunction with a research team at the University of Oklahoma Medical Center. Electrophoresis with enzyme visualization was also performed on rat reproductive tissue.

The eye mutant studies revealed no melanin production from extracts of *echinus*, *glassy*^{3} and *rough* males at puparium formation. *Glued* showed greatly reduced activity from the slow migrating tyrosinase A_2 compared to the wild type, whereas *furrowed*^{69} showed great variation in ${}_2$ activity. This was evidence that other eye mutants than *lozenge* simultaneously affect eye structure and tyrosinase activity. These mutants may well be sites for synthesis of other polypeptides of tyrosinase.

Work on the rat reproductive tissue revealed tyrosinase activity in the developing ovaries and ducts of the female, the seminal vesicles and prostate glands of the male, as well as the penis of the male. This was most interesting in that the same enzyme utilized by the insect was also found in the mammal regulating the development of reproductive tissues. The breakthrough relating tyrosinase to development of rat reproductive organs will become the subject for other research grant applications.

Title: Graduate Schools in Private, Urban Universities: A Comparative Study

Researcher: Thomas F. Staley, Graduate School Dean

Institution: University of Tulsa

Abstract

The objective of this study was to survey graduate education at five institutions whose private, urban status makes them similar to the University of Tulsa.

Analysis of graduate education at the University of Denver, Southern Methodist University, Tulane University, Vanderbilt University, and Washington University (St. Louis) was accomplished by questionnaire, catalog survey, and, where possible, by interview and on-campus observation. Areas of inquiry were: (1) graduate program planning and development; (2) graduate faculty; (3) graduate students; and (4) graduate curriculum. Questionnaires received a 46.66 percent return.

Under area one, admission standards of an average grade point of 2.9 was minimum; 70.8 percent of all departments required the graduate record. Examination aptitude test with average minimum of 523 verbal and 532 quantitative; probation occurred when grade point fell below average of 3.0; 58.7 percent require a written thesis for the Master's degree; 36.9 percent require a written final examination on the Master's; 64.6 percent require an oral examination for the Master's; for the Doctorate 98 percent require a qualifying examination; 100 percent require an oral examination for the Doctorate for which an average of 26.9 hours can be transferred from another institution.

Membership on graduate faculties required first, the possession of a Doctorate, and second, publication. Full professors account for 28 percent of the graduate faculty; associate professors, 25 percent; assistant professors, 29 percent; instructors, 7 percent; and others, 11 percent. Time division had faculty devoting 50 percent to teaching, 38 percent to research, and 12 percent to committee or administration related work. Teaching load was 2.1 courses per semester or 8.4 contact hours. Teaching effectiveness and publication were the most important promotion criteria.

An average of 3.1 non-service fellowships were given at $2,421 per year; 6.5 teaching assistantships at $2,349 average stipend.

Curriculum offers averaged 11.5 courses per term for graduate students. Thesis hours ranged from 4.1 mean for Master's to 19.4 for the Doctorate. Sixty percent required language proficiency for the Master's. For the Doctorate, 12 percent required no language, 26 percent one, 60 percent required two, and 2 percent required three languages.

Title: High School Physics Teachers of Oklahoma

Researcher: Verdine E. Trout

Institution: Central State College

Abstract

The objective of this project was to gain information concerning the academic preparation, class load, schedule, high school physics teaching program, and additional training desired by Oklahoma high school physics teachers.

Information gained was hoped could be used to improve the training and recruitment of high school physics teachers at Central State College, and also for the development of summer programs for high school physics teachers wishing to improve their skills.

State Department of Education records concerning 231 Oklahoma high school physics teachers were examined. A questionnaire was sent to all 231 physics teachers with a return of 72 percent. From the examination of records and questionnaires, data were compiled for a final report. Interesting were several findings:

(1) The returned surveys covered teachers in 70 percent of the Oklahoma schools.

(2) In the 70 percent some 2,790 students were enrolled in physics.

(3) Women comprised 9.5 percent of the sample as compared with 16 percent women physics teachers nationally.

(4) Greatest academic preparation of physics teachers was math at 26.1 semester hours average. Biology was second at 22.4, chemistry third with 19 semester hours, and physics fourth at an average of 17.2 semester hours credit.

(5) Masters degrees were held by 35.7 percent of the teachers with only 3 concentrating in physics at the graduate level.

(6) Approximately 80 percent used the traditional in teaching.

(7) Many desired additional training. Laboratory technique, electricity, and refresher general physics were the courses preferred.

From this and related information, material was developed for a two-weeks workshop in physics for high school teachers during the summer at Central State College. A report was prepared.

Title:	History of Panhandle State College
Researcher:	Kathryn A. Sexton, Associate Professor of English
Institution:	Panhandle State College

Abstract

The educational objective of this project was to initiate the writing of a history of Panhandle State College. The history was to be a combination of secondary materials such as statistical facts concerning Panhandle Agricultural Institute (1909-1921); Panhandle Agricultural and Mechanical College (1922-1967); and Oklahoma Panhandle State College of Agriculture and Applied Science (1967-). Interspersed with these facts were primary materials such as interviews with former administrators, former faculty members, former students and current faculty members of several years' service.

After the necessary equipment needed for taping interviews had been purchased, more than fifty interviews were completed during the first summer. These taped interviews included interesting materials from two former presidents, Dr. Marvin E. McKee and Senator Byron Dacus, the only surviving past presidents; a former dean and vice president, Dr. Oliver Willham, retired president of Oklahoma State University; several former professors including Dr. Wright Langham (a former student, too), an atomic energy specialist, and Phil B. Noah, president of the American National Life Insurance Company; several retired professors of longtime service; and several former students in California, Texas, North Carolina, Kansas, New Mexico, Washington, Wyoming, Illinois and Oklahoma. The statistical material came primarily from the Panhandle Agricultural Institute years and the early Panhandle Agricultural and Mechanical College years. There was a dearth of printed material available concerning these years; therefore, more interviews will be conducted. Although a good start has been made on collecting material, several years will be needed to see it to completion.

Title: Implementation of Moffett Language Arts Materials in a Third Grade Classroom

Researcher: Norman Frame, Professor of Education

Institution: East Central State College

Abstract

The first objective was to determine the problems involved in the implementation of the Moffett curriculum plan. The second objective was to develop materials for a more detailed guide than provided by Moffett for the implementation of his program at the third grade level. The third objective was to serve as an exemplary program so that other teachers and prospective teachers may learn about Moffett's approach to language tests.

Mrs. Bettie Black's third grade class in the Ada Public Schools provided the locale for implementation, and Mrs. Sally Sanford, a graduate student in elementary education, kept a running record of the classroom activities.

A sound-slide program was developed to illustrate classroom activities in Moffett's program. The program was also described in a paper submitted to ERIC and in talks to the Muskogee Reading Council and to a state ACE group. The program was explained to the local superintendent and two principals who discussed plans for expanding the program.

Evaluation of the program was carried out through the use of pre and post written compositions and oral tapes.

The research assistant's notebook proved a helpful detailed guide for implementing Moffett's program in other situations and for use in methods classes.

Title: Incorporation of Recent Techniques Into Laboratory Exercises

Researcher: Serafin Ramon, Associate Professor of Biology

Institution: Oklahoma Panhandle State College

Abstract

The educational objective of this study was to introduce advanced and introductory students to the procedures and techniques used in doing research by having them participate in designing and carrying out experiments which could be incorporated into freshman and sophomore laboratory exercises.

Simple techniques were used to run various plant and animal extracts on "thin layer" and "partition" chromatography and on gel-electrophoresis apparatus. Each experiment was repeated from six to eight times to check the reproducibility of the results.

Six student laboratory assistants and approximately sixty students enrolled in general biology and general botany classes were involved in running the experiments.

The procedures which proved most successful were incorporated into the laboratory exercises for the beginning courses offered in the department of biology. Approximately one-third of biology-botany laboratory periods at Oklahoma Panhandle State College now involve an experimental approach similar to this project.

Title: Induction of Phenocopies of Lozenge Mutants of Drosophila Melanogaster

Researcher: E. Edward Peeples, Associate Professor of Biology

Institution: Southwestern State College

Abstract

This research tested the hypothesis that inhibition of tyrosine metabolism in the fruit fly, Drosophila Melanogaster, will cause abnormalities of structural development related to eyes, spermathecae, and claws. Previous findings indicated that tyrosinase (or phenol oxidase) activity paralleled the degree of structural abnormalities in the same organs of the lozenge series of mutants in Drosophila Melanogaster.

Developmental media for wild-type Oregon R Drosophila larvae was treated with various amounts of four known tyrosinase inhibitors. The resulting adult flies were examined for eye abnormalities, and some spermathecae capsules were also examined.

Of the four inhibitors, phenylthiocarbamide, 2-mercaptobenzothiazole (MBT), 8-hydroxyquinoline (8-HCH), and ethylenediaminetetraacetate (ETDA), only the first produced no effects in the adult structures. One inhibitor, MBT, reportedly inhibited banana phenol oxidase activity. It caused either fusin of facets of the eyes, a roughened ridge of the eye surface, or a white patch on the eye surface depending on the concentration used. Another, 8-HCH, was reported as a potent chelating agent for copper^{++}. It caused either single facet fusion scattered over the eye surface or facet fusion to form a glassy patch at the center or in the dorsal aspects of the eye. Activation of Drosophila phenol oxidase was reported inhibited by EDTA. EDTA had a pronounced lethal effect on larvae development, and when developing larvae were transferred from it to normal media, eye defects similar to those produced by MBT and 8-HCH appeared and the permathecae had an atypical shape.

The fact that the three inhibitors affected eye development similarly but did not affect eye color is interesting, especially since each inhibitor is structurally dissimilarand presumably reacts with tyrosinase in a different manner. Also interesting to note was that all these compounds were lethal at sufficient concentrations. They ultimately blocked vital functions but more easily arrested eye development. A complete lozenge phenotype was not obtained by any treatment.

Title: An Initial Study Exploring the Use of Videotapes in
Student Teacher Training

Researchers: Gerald Boggs, John Densford, Joe Parsons, Ray Stout
Members, Department of Education-Psychology

Institution: East Central State College

Abstract

The first objective of the project was to evaluate the use of videotapes in the performance of interns. The second objective was to evaluate the use of videotapes of actual student teaching situations in the formation of attitudes toward teaching. The third objective was to study the feasibility of including small group sessions of interns viewing their own teaching as part of the regular curriculum in teacher education.

Experimental and control groups of interns were selected prior to their assignment to the public schools. An attitude instrument, the Minnesota Teacher Attitude Scale, was selected and administered on a pre-post basis. Interns who were teaching in the public schools were videotaped in actual teaching situations and were brought back to campus and placed in small groups for viewing and discussing.

Ratings of performance were obtained on both experimental and control groups. The two groups were composed statistically for change in attitude and performance. Informal staff meetings were conducted to determine whether such a method will be included in the regular curriculum in teacher-education.

Seventy-five interns (63 control and 12 experimental) were involved in the project. An instrument was devised to rate student teaching performance with an overall score. Discussions in the group sessions were not restricted to teaching styles although this was stressed. The control group did not receive any type of video treatment. A statistical analysis using the correlated t and the Mann-Whitney U indicated no significant difference between groups or change of attitude or in performance, but it was included in the curriculum for other values.

Title:	Initiation of a Continual Study of East Central State College Teacher Education Program as a Basis for Innovation
Researcher:	Jack Nance, Associate Professor Education-Psychology Department
Institution:	East Central State College

Abstract

The educational objective of this project was the evaluation and improvement of professional education students and program. Part of the objective dealt with utilizing the data for this study and other educational research as a base from which to develop and research innovative ideas in teacher education at East Central State College.

The initial undertaking was a review of the literature. Included in this survey of the research studies in the subject area was an investigation of the Educational Resources Information Center (ERIC) documents of research in education. Out of this information was gleaned the major aspects of the other continual studies of such programs. Found basic to most continual studies was a follow-up study of previous graduates. Therefore, activity was generated in designing a follow-up study and developing an interview schedule.

Interviews were conducted with fifty graduates using the schedule which investigated teacher education program aspects. After completing the pilot interviews, the schedule was modified and prepared in questionnaire form. This, in turn, was sent to graduates in 1968 and 1969. Data were analyzed from all the approximately 500 students involved and a report made at a dissemination conference in Edmond in 1970. One aspect of the findings related to objective two was that innovative ideas in teacher education which had occurred at East Central State College and those which should be implemented had a strong tendency to make the teacher training courses more relevant to graduates needs.

Title: Integration of a Continuing Research Program Into the Basic Laboratory Curriculum: A Feasibility Study

Researcher: Allen G. Lane, Assistant Professor of Chemistry

Institution: Southwestern State College

Abstract

The objective of this project was to test the feasibility of introducing open-ended or research type projects into the basic organic laboratory curriculum.

The project initiated replaced a segment of the regular chemistry curriculum. At the beginning of the semester, all students worked on the same experiments. Later, the experiments became more open-ended as the students' abilities to assume more individual responsibility increased The project also was organized in phases. Phase 1 included introduction to (a) the theoretical aspects of the research problem, (b) use of the chemical literature, and (c) basic organic qualitative analysis. Phase 2 introduced students to the fundamental factors involved in the design of multi-step synthesis. The students submitted well-documented synthetic approaches for the preparation of compounds required for the research program. After group discussions on the merits of each approach, the most favorable method was selected. Phase 3 divided the students into smaller groups (approximately five students per laboratory assistant) after they had completed several steps in the original synthetic scheme. Each group assumed the responsibility for completing a separate portion of the project. Weekly seminars were held for the purpose of summarizing data and for evaluation of individual progress. Phase 4 had each student prepare a research report which summarized his efforts.

The findings were extremely encouraging in that the comparative questionnaire that was given to both the research group and to non-research students in other sections reported very favorable to this approach. Further investigation into this area promised to be very fruitful.

Title: An Interdisciplinary Approach to the Measurement of "Depersonalization"

Researchers: Ray Quiett, Assistant Professor of Sociology
Roy T. Maxwell, Professor of Psychology

Institution: East Central State College

Abstract

The project aimed to: (1) define "depersonalization" and determine its aspects or components through a sociological and psychological interdisciplinary approach; (2) develop a scale or some other method of measuring "depersonalization;" and (3) determine the validity and reliability of the measure developed.

A study of the literature was conducted to determine what psychologists and sociologists indicated was involved in the term "depersonalization." Opinions were sought from 200 students in both fields regarding their conception of "depersonalization" and of selected items found in the literature on the subject. Thus the definition and its various aspects were determined.

The next step called for an outside consultant. This individual studied the findings of the search and the expressed student opinions and discussed these in considerable depth with the research staff. From this work, a strategy rather than a scale was deemed more appropriate and so was devised as the way to approach depersonalization.

Development and background work took all of the project time and funds leaving the assessment of the third objective, the determination of the validity and reliability of the strategy, for subsequent research.

Title: Introduction to Film

Researcher: David L. Cawthon, Instructor of English

Institution: St. Gregory's College

Abstract

This project, Introduction to Film, attempted to establish a system of instruction which would provide the student a basic knowledge of the history of the medium, a basic knowledge of the grammar of the medium, a comparative study of the film in relation to other art forms, and provide a setting for artistic aesthetic experience.

The activity of the developing course included lectures on current thought in film criticism and history. Also, screening of films helped to illustrate material presented in lectures and to provide a setting for aesthetic experience. Discussion followed the screening of a film in cells of five students for the purpose of criticizing the film and later presentation of criticism to the entire class for group discussion. Students were required to read and summarize reviews of films through choosing reviews written by leading film critics, reading them, analyzing their frame of reference, and concluding with their own opinion about the review.

At the conclusion of the course, students evaluated their experiences in three areas: objectives, film selection, and course content. In a five point rating scale from excellent to poor, the students rated accomplishment of the objective "knowledge of the history" at 94 percent in the "excellent" or "near excellent" category. "Knowledge of the grammar" they rated 72 percent in the same category. "In relation to other art forms" was excellent or near at 61 percent, while the "setting for aesthetic experience" was rated "near excellent " or "excellent" by 71 percent of the students. All students agreed that the objectives had been accomplished, and, with few exceptions, agreed that the films screened adequately represented the academic area under study.

Title: An Inventory of Active and Interested Research Personnel, 1968-69

Researcher: Kenneth E. Sorey, Chairman, Division of Social Sciences

Institution: Phillips University

Abstract

The purpose of this project was to compile and publish a directory, for dissemination to all colleges and universities in Oklahoma, listing faculty members who are actively engaged in research or interested in doing research, in order to facilitate and promote research through co-operative efforts and opportunities for consultation. Secondarily, the project was to develop a pattern for securing this information in the future in order to maintain and update the directory. To do this more effectively, the information was to be placed on data processing cards.

The information blank was developed and sent to individuals at each institution who had been identified as a research officer or consortium representative. The research officer or representative disseminated these blanks to interested faculty who in turn filled them out and then returned them to Phillips University.

The information was grouped by name of faculty member, institution, and research interest. Some revisions appeared necessary in this area because of the difficulty in obtaining specific areas of research interest within a general discipline. The directory was printed and disseminated by the consortium.

Title: Investigation of Coal Balls Containing Fossil Plants from Oklahoma and Surrounding Area

Researcher: Ronald H. Segal, Assistant Professor of Biology

Institution: Southwestern State College

Abstract

The purpose of this project was to provide the opportunity for visiting coal fossil sites and collecting samples of fossilized materials to compare with other area collections of fossilized Pennsylvania-aged floras.

Successful collecting trips to eastern Oklahoma were made and fossil material collected, which material is currently being examined and compared with that of other Pennsylvania-aged floras.

A rock saw was purchased for the project with funds from the project and a grant from the Sigma Xi fraternity. The American Midland Naturalist published a paper relating to the project.

Title: A Life of Benito Juarez

Researcher: I. E. Cadenhead, Jr., Professor of History

Institution: University of Tulsa

Abstract

The objective of this grant was a trip to Mexico for the researcher to peruse the Benito Juarez materials housed at the Biblioteca Nacional (National Library) and to obtain other materials thereby setting the stage for writing a short biography of Juarez, President of Mexico from 1857 to 1872.

The trip to Mexico was taken, the library was visited, and leading Mexican historians were engaged in conversation. Subsequently, research assistance was utilized to discover what significant work had been done on the subject since the last major biography was published. Some microfilm of pertinent material was obtained and the compilation of a bibliography begun.

Visiting Mexico proved extremely helpful, although the visit was too brief for as thorough a search as might have been undertaken. The investigation into published materials was disappointing. There simply had been nothing of great significance published on Juarez in recent years. Yet the purpose was achieved, and the investigator became aware of the materials extant. The microfilms obtained provided some primary sources not previously used. The writing of the biography remained the investigator's major task.

Title: The Literary Career of Frank O'Connor

Researcher: James H. Matthews, Assistant Professor of English

Institution: University of Tulsa

Abstract

The primary objective of this research was to uncover as much of the uncollected and largely unpublished literary work of Frank O'Connor, noted but largely ignored Irish writer, as possible.

The first process was to locate and duplicate hitherto unavailable manuscripts. Most of this duplication was accomplished early with material from the Library of Congress arriving later. This material was then collated with the more well-known works.

The second enterprise was the collection of taped interviews with people close to O'Connor, including where possible, family and fellow Irish writers. The first set of interviews came from a trip to the annual meeting of the American Committee for Irish Studies. Men who granted interviews at this time were Thomas Kinsella, Richard Montague, and Seamus Kelley. A later interview was scheduled in Annapolis with the wife of O'Connor. This interview had not been completed at this writing.

The final step involved a trip to Ireland, which had to be postponed beyond the project date because people who were to be interviewed would not be available until then. Other duplications of manuscript were to be accomplished on the Ireland trip at Dublin.

A noticeable contribution to this university's resources was the acquisition of portions of two rare Irish periodicals in which O'Connor did a good deal of his early work--The Bell and The Irish Statesman.

Title: Lloyd Jones, Labour Journalist, 1871-1878: A Study
in British Working-Class Thought

Researcher: John D. Osburn, Associate Professor of History

Institution: Oklahoma Panhandle State College of
Agriculture and Applied Science

Abstract

Objectives of this project were: (1) to examine British periodical sources containing writings of Lloyd Jones, largely but not exclusively during 1871-1878; (2) to examine one MS collection (Ernest Jones' letters in the Seligman Collection, Columbia University library) for possible letters by Lloyd Jones; (3) to integrate the results of this study into a doctoral dissertation in British history which would bear the same title as this study; (4) to help lay the foundation for a publishable biography of Lloyd Jones; and (5) to improve knowledge of European and British history about social and economic affairs of the nineteenth century.

The Seligman Collection, Butler Library, Columbia University, New York, was examined for a pamphlet by Lloyd Jones, entitled "Working Men's Associations and Cooperative Stores, 1857," and for letters by Jones in the Ernest Jones Papers. The letters and pamphlet were not found. The New York Public Library was then checked with the same results. Success in finding periodicals for which Jones wrote were better. In Chicago, the Center for Research Libraries had the Cooperative News. At Harper Memorial Library of the University of Chicago, there were various relevant books and pamphlets as at the Newberry Library where the Times, North British Review, and Spectator were found. Notes from the London Reader, a periodical once edited by Jones, were taken at the library of the University of Minnesota at Minneapolis. The library of the University of Wisconsin at Madison provided the Christian Socialist, To-Day, and selected other books. The Cooperative News proved surprisingly rich in writings by Jones, but no library examined was able to produce the 1857 pamphlet.

Title: Meeting Behavioral Objectives in Adolescent Psychology
Through Videotaped Behavioral Sequences of Adolescents

Researcher: W. R. Altmiller, Chairman
Department of Education-Psychology

Institution: East Central State College

Abstract

There were three major objectives. The first was to develop behavioral objectives for adolescent psychology which involve competencies in applying psychological principles to typical adolescent behavior patterns. The second objective was to develop videotaped materials involving adolescent behavior patterns which were related to the competencies expected of students of adolescent psychology. The third objective was to determine the effectiveness of these materials in meeting the established objectives.

Two professors who teach psychology of adolescence, the chairman of the Education-Psychology Department, the coordinator of research, and the director of audiovisual services worked together as a team identifying behaviors, identifying schools to be used and viewing the tapes for evaluation purposes. The director of audiovisual services and his staff visited schools in the East Central District to complete the videotape sequences.

Behaviors were identified for videotaped materials, but have not been written in behavioral objective terms. The evaluation, modifying, and writing of behavioral objectives remained a continuous process.

The effectiveness of the materials was hampered because some of the videotaped sequences had to be "retaped." Technical problems caused some tapes to be of inferior quality and not clear enough to provide the objectivity needed to determine the effectiveness of all materials.

Title:	Meeting Behavioral Objectives in Child Psychology Through Videotaped Behavioral Sequences of Children
Researcher:	W. R. Altmiller, Chairman Department of Education-Psychology
Institution:	East Central State College

Abstract

The first objective was to develop behavioral objectives for child psychology which involved competencies in applying psychological principles to typical child behavior patterns. The second objective was to develop videotaped materials involving child behavior patterns which are related to the competencies expected of students of child psychology. The third objective was to determine the effectiveness of these materials in meeting the established objectives.

Behavioral objectives were developed for a course in child psychology. As an illustration, the first objective was "Psychology 342 students will be expected to adopt a 'child development' point of view in regard to child behavior." Evaluation of the objective was more difficult than its writing but was accomplished with activities such as "Observe a child who appears to be 'happy' or having a good time and explain the psychological dynamics or reasons for the behavior, and report this in writing." Several consultants, Del Shalock, John Barson, and Dale Hamreus all helped in developing behavioral objectives. The use of behavioral objectives did not, however, result in as many changes as had been anticipated.

Videotapes were developed in relation to some of the objectives stated. For instance, a videotaped lecture with the materials of Ralph Ojemann in use was prepared to help children understand their own behavior. Study materials related the videotape materials to the objectives of the course and gave some guidance regarding the factual materials to be learned by the student.

Overall reaction of students was favorable. The use of behavioral objectives appeared to be feasible and may be implemented without considerable expense.

Title: A New Method for the Determination of Amino Acid Content in Pogonomyrmex spp.

Researcher: Kurt Schaefer, Associate Professor of Biology

Institution: Oklahoma Panhandle State College

Abstract

The purpose of this project was to try a new method used for detection and identification of various amino acids present in the harvester ant, Pogonomyrmex spp.

A promising procedure for the extraction was obtained from Dr. Eisenbran of Oklahoma State University, Stillwater, Oklahoma. This method did not provide satisfactory results in extracting and refining the identifiable amino acids, but the researcher felt it was a matter of interpreting the methodology employed.

Two student assistants were used in the project, and Mr. W. P. Duncan from the Chemistry Department contributed assistance, also.

Title: Physiology of Spore Germination in Aspergillus Flavus

Researcher: William G. Sorenson, Assistant Professor of Biology
Institution: Oklahoma City University

Abstract

The intention of this project was to begin a time-course study of the spore germination process. The study involved measurement of total dry weight, total protein, and nucleic acid content of known quantities of spore during the first few hours of growth in liquid shake culture. This information would provide a basis for an experimental study of the effects various nutritional and environmental factors have on germination in this species.

Initially, conditions for optimal germination in liquid shake culture were worked out. This included procedures for standardizing inoculum. Two methods were used: optical density of spore suspension was correlated with haematocytometer counts and optical density was correlated with the dry weight of known volume of spore suspensions. A linear graph was obtained between absorbance and a dry weight of one to ten mg. per ten ml. of suspension.

Other studies included the effect of medium volume per flank, the effect of spore concentration, and the effect of various mineral ions. Other activities included assays for glucose (Nelson-Somogyi) and protein (Lowry), and methods for cell disruption to liberate proteins and nucleic acids for analysis.

During the two months of the project, the method of producing large quantities of spores, standardizing suspensions in terms of dry weight per ml. and inoculating with known weights appears to be workable. More study needs to be made on developing optimal nutritional conditions for germination to improve the rate. Also, the problem of spore disruption needs additional work since spores were much more durable than most kinds of cells for which cell disintegration devices were designed.

Title: Pilot Program to Develop Specific Ways to Utilize
Computers in Instruction

Researcher: James O. Danley, Chairman, Department of Mathematics

Institution: East Central State College

Abstract

A first objective was to determine which existing courses or new courses might lend themselves to the utilization of computers in instruction. Obvious courses would be mathematical statistics, business and economic statistics, social research, and introduction to graduate study.

A second objective of the study was to develop specific plans and materials for the use of computers in instruction and/or study activities identified. Consultation with interested individuals resulted in the determination that the computer could be involved in business and economic statistics, principles of marketing, and methods and techniques of social research.

Materials related to application of the computer to the various courses were purchased by the library. In addition to these materials, several statistical computer sub-routines for data reduction and analyses were developed. In the marketing course, a supermarket management game was developed to be used by the class for the purpose of understanding the management of a large business or corporation. In the social research class, chi-square programs were developed for a method of analyzing questionnaires pertaining to sociology. In the three courses, a trial of the materials was conducted. Using five students or employees in the development and application, some 196 other students were involved in receiving the benefits of the instructional design. The results were encouraging and verified the effectiveness of the computer for the trial courses.

Title: Pilot Project Teaching Museum

Researcher: Cecil Parkison, Director of Research and Development

Institution: Oklahoma Military Academy

Abstract

The educational objective included the development of activities around establishment of a Natural History Museum by involving the professor with his students in a research environment. This also included the accumulation of teaching materials of local origin to enhance zoology courses in the belief that specimens from known locations studied by local students were more impressive than commercial ones and that the method of study in itself was a valuable learning activity.

After the purchase of equipment, a Natural History Club was formed. At first, the meetings dealt with the theories of collection, preparation, and storage. As skills developed in the group, collections were begun. The collections were made on academy holdings which included over 500 acres of undeveloped land adjacent to the main campus. Traps were set in runways and trails near watering places. The specimens were then prepared and labeled according to custom for convenient and safe storage.

Sixteen students were involved in collecting and preparing the 27 specimens (largely rats) prepared at this writing. Culmination of the year's activities was planned to be participation in the spring meeting of the Oklahoma Academy of Science, but severe rains and flooding limited attendance to only six from the group.

Title: Preliminary Floristic and Plant Community Study of the Gypsum Hills of Oklahoma

Researcher: James F. Lovell, Professor and Chairman, Biological Science

Institution: Southwestern State College

Abstract

Research objective of this study concerned a preliminary floristic study of the vegetation in the Weatherford area Gypsum Hills of Oklahoma. One aim of analyzing the flora and interpreting the field observation to see if the data could serve as a means of showing ecological correlations between the plant species in the various plant communities was extended to striving to interpret these complex communities well enough that in the future net productivity (energy) studies of the various plant groups might be initiated.

In the project activities, numerous plant collection jaunts throughout the year into the Gypsum Hills were made to insure an adequate seasonal sampling of the flora of the area was obtained. Detailed observational notes and photographs were taken of selected potential plant communities for later analyses to determine if any possible community correlation could be obtained from the numerous plant species in the various habitats in the Gypsum Hills. From the floristic study, samples were identified, preserved, and permanently placed in the Southwestern State College Herbarium. Two students were directly involved in the work of the project.

As a result of the collection trips, samplings, preservation and recording of the data there definitely appears, at this stage, to be plant communities correlated quite closely to the Weatherford Gypsum Hills habitats. Much additional research time will be required before an accurate and comprehensive report of these plant communities could be prepared. However, the preliminary work has been encouraging.

Title: A Preliminary Study of Students' Attitudes Toward Innovation in Instruction

Researcher: Dale Hassinger, Professor of Education

Institution: Southwestern State College

Abstract

Research objectives for this project were to measure change in students' attitudes toward new ideas in instruction when appropriate innovative materials and procedures are used as part of instruction in a college course, and to develop a proposal for outside funding to continue research in the problem area.

A questionnaire was administered to a group of 105 students in a general methods course to measure their attitudes toward certain innovations. This was the experimental group. At the end of the nine-week course in which the innovations in question were used, the questionnaire was repeated and change in attitudes recorded.

In a section of 35 students for the same course during the second nine-week period, the procedures were repeated except that the innovations were studied through lectures and discussion and not made a part of the instructional procedure. This was the control group.

Data were treated statistically using the analysis of variance on the null hypothesis for attitude change.

Mean change for the experimental group was +1.03 and for the control group +.47, but the differences were not statistically significant at either the .05 or .10 level.

Unanticipated factors may have affected the results. A limited amount of special materials produced difficulty for students in the experimental group because of inconvenience in having to schedule the learning laboratory facilities. This may have influenced some attitudes negatively. Also, several students commented that they did not understand the meaning of parts of the questionnaire. These factors left room for the preparation of a proposal which would provide for more materials, better instrumentation, and better controls.

Title:	A Preliminary Study of the Coal Ball Flora of Oklahoma
Researcher:	Robert W. Judd, Professor of Biology
Institution:	Bethany Nazarene College

Abstract

Chief among the objectives of this research was to increase the knowledge of Oklahoma fossil flora. Particularly, the research was geared to the study of the fossil flora of the Pennsylvania Period as revealed in the specialized concretions called coal balls.

Activities undertaken were grouped into these areas:

(1) Search for sites and the collection of material. Intention was to cover the east-central and northeastern parts of the state in the search.

(2) Preparation of the material for study. This consisted mainly of cutting the coal balls and the preparation of peels and slides.

(3) Evaluation and identification of material. This was to be achieved through microscopic study.

(4) Collaboration for further study. This was to be accomplished with interested others. Nine sites were visited in east-central Oklahoma, but only one yielded the desired material. Old spoil banks east of Checotah provided some coal balls. Several were collected and cut by a diamond saw and prepared for study using the standard acetate peel techniques. About 150 pieces were prepared and analyzed. Some 115 microscope slides were made.

The present collection did not differ significantly from others identified throughout the United States. Some gaps were noted, but further collections, preferably in the more promising northeastern area near Kansas, would fill these gaps. Tentative identification revealed fifteen genera of fossilized flora.

Title: A Preliminary Survey of the Diatomaceae of the Upper Blue River Watershed

Researcher: Elmer Ray Brown, Assistant Professor of Biology

Institution: East Central State College

Abstract

The primary objective of this project was to determine species composition of an unpolluted natural stream in central Oklahoma. Collection stations were established on five reaches of the upper Blue River where specimens of Diatoms, an indicator organism, were collected for laboratory analysis. Species identification, frequency, and distribution of population were determined. Collecting devices called diatometers were constructed and placed at each of the five collection stations. Samples were collected each week during the period of the project. Slides were made of the diatom samples and prepared for future microscopic analysis.

In addition to the organism sampling, each station was equipped to collect water samples. Techniques were identified and procedures established for recording temperature, pH, conductively and turbidity for each of the water samples by collecting station. One student assistant helped in the field in collecting and preparing specimens. Two others participated indirectly.

Title: Preparation of Eight Videotapes as Instructional Aids in Business Education Methodology Courses at the College Level

Researcher: Bill G. Rainey, Chairman
Department of Business and Economics

Institution: East Central State College

Abstract

The educational objective of this project was to develop a "distinguished" lecture series of television tapes with 40-45 minutes running time, each featuring a nationally-known authority, designed specifically to enhance instruction in collegiate undergraduate and graduate "methods" courses in business education.

In addition, the project aimed at testing these tapes in methodology classes at East Central State College and other cooperating colleges and loaning the tapes to other colleges in the Oklahoma Consortium.

Several distinguished business educators prepared videotape presentations over subject matter normally covered in the basic methods course in business education. Tape and an honorarium were provided. Universities which provided taping facilities were the University of Oklahoma, Oklahoma State University, Portland State (Oregon) University, University of Nebraska, University of North Dakota, University of California, Columbia University, and East Central State College. Selected professors at these institutions prepared tapes and returned them to the project office.

At East Central State College, biographical information about the lecturers and discussion questions related to the subject matter of the tape were printed to be distributed in connection with the tape distribution. Trial runs at East Central, Oregon State, and Columbia were encouraging. Other institutions such as Oklahoma State University developed plans for using the tapes at later times.

Title: Profile of Business Education in Oklahoma's Secondary Schools

Researcher: Bill G. Rainey, Chairman, Department of Business and Economics

Institution: East Central State College

Abstract

The objective of this project was to develop a profile of business education in the public schools of Oklahoma for the purpose of dissemination to colleges and universities having responsibility for preparing secondary business teachers. This dissemination of a comprehensive profile would be done to aid teacher trainees to do a more effective job of preparing future Oklahoma business teachers.

A detailed questionnaire was mailed to approximately 1,300 business teachers and administrators on the mailing list of The Balance Sheet. Southwestern Publishing Company supplied their list. Upon receipt of the first questionnaire, a second one was sent to respondents. Second and third reminders and duplicate questionnaires were sent out periodically to obtain an appropriate number. Over 1,200 completed questionnaires were returned.

The data collected has been tabulated, interpreted, and analyzed, but not disseminated at this writing. Significant findings, conclusions, and recommendations were being formulated from the data to be incorporated into the final report which will go to all business education departments of Oklahoma colleges and universities with a recommendation that it be used in teacher-training classes. Distribution will also be made to the Oklahoma Business Education Association and to the Oklahoma Teacher and The Balance Sheet for possible publication.

Title: Proposal for College Science Improvement Grant

Researcher: Bill B. Arnold, Associate Professor of Chemistry

Institution: Central State College

Abstract

This study was undertaken to help insure the success of a proposal to be submitted to the National Science Foundation for a grant under the College Science Improvement Program.

Departments of Biology, Chemistry, Mathematics, and Physics at Central State College, Edmond, Oklahoma, formed an Interdisciplinary Science Planning Committee in 1968. Responsibilities for the committee were to: (a) do a self-study of the science program at Central State and develop therefrom a set of long-range goals; (b) determine how funding from the National Science Foundation through the College Science Improvement Program could help attain these goals; and (c) prepare a grant proposal for submission to the National Science Foundation.

The grant proposal was submitted.

Title: A Proposal to Develop an Interdisciplinary Humanities Model

Researcher: Paul L. Brown, Professor of Philosophy

Institution: University of Tulsa

Abstract

The purposes of this educational endeavor were to design an interdisciplinary humanities course model to be implemented in the fall of 1969 and January, 1970, and to develop a proposal to implement and evaluate the model for submission to the Division of Education and Special Programs, National Endowment for the Humanities, Washington, D. C.

An interdisciplinary examination of the cultural and political activities in Great Britain in the twentieth century as viewed from the disciplines of literature, philosophy, and political science was planned for the project. Students were to be either juniors, seniors, or graduate students and to enroll in the fall in Dr. Staley's English course "Dominant Literary Movements in Twentieth Century English Literature," Dr. Brown's philosophy course "Philosophy in Great Britain in the Twentieth Century," and Dr. Strong's political science course "British Foreign Policy in the Twentieth Century." Several combined sessions were planned for the fall semester of these courses to achieve the interdisciplinary effect and to plan for the January activity. For the January activity under "Independent Study" the students would make a three-week trip to London and other European places. In London, they would continue the activities of the fall by studying with experts there in the same fields and by visiting the British people and living with them.

The proposal was submitted to implement this activity with tutoring for twelve deprived Indians, Negroes, and Whites, but the proposal was not funded, so only those who were able to finance the trip were able to complete the program. The trip for thirty-one students achieved the interdisciplinary objectives.

Title: Pyrolsis of Trichlorotrifluovoethane

Researcher: Merle L. White, Assistant Professor of Chemistry

Institution: Central State College

Abstract

The project was undertaken for two purposes. First, a need was present to evaluate rate parameters for the thermal decomposition of some freon compounds, and, second, a determination needed to be made of the suitability of this nature of research being performed by undergraduate students.

Work in the project involved experimental measurements characteristic of a classical chemical kinetics study and the interpretation of the experimental results. For the two undergraduates in the project, the study included tasks such as learning vacuum technique, making high temperature measurements, and developing analytical techniques using gas chromatography. The two undergraduate students involved in the project proved to be quite capable and the project was deemed worthy of undergraduate researchers.

Data were collected for evaluating the Arrhenious A factor and for evaluating the activation energy for the reaction: $CF_3 C Cl_3 \longrightarrow CF_3 + C Cl_3$

Further experimental work was planned to complete the reaction mechanism study. Plans were also made for extending the study to additional compounds during succeeding school years.

Title: The Reaction of 1, 3, 5 - Trichloro - 2, 4, 6 - Trioxohexahydro - s - triazine with Tetrahydrofuran and Tetrahydropyran: A Restudy

Researcher: William P. Duncan, Instructor of Chemistry

Institution: Oklahoma Panhandle State College of Agriculture and Applied Science

Abstract

The research objective was to completely characterize the reaction of 1, 3, 5, - trichloro - 2, 4, 6 - trioxohexahydro - s - triazine, (I), with tetrahydrofuran and tetrahydropyran. Concrete mechanistic interpretations would result. Using this method, the postion of substitution or the type of product obtained could be accounted for in terms of ionic effects. Eventually, the investigation would lead to further study of the reactions of various other heterocyclic compounds with N - halogen type compounds.

Two undergraduate students worked on the problem which made extensive use of gas chromatography, vacuum distillution, and infrared spectroscopy. Findings indicate that direct chlorination of tetrahydrofuran and tetrahydropyran at 0° yields the corresponding 2-, 3- dechloro derivatives in rather modest yields, ca, 28%.

In an attempt to expand the scope of the identified reactions, p-dioxane was reacted with the trichloroisocryanuric acid. Charaterizations were consistent with those reported by Summershell and Lunk for p-dioxane chlorinated with chlorine gas. Other experiments were carried out revealing reaction consistencies paralleling those by Walling with t-butyl hypochlorite even though beyond expectation. The photochemical reaction identified in the iodine chloride catalysis, however, showed marked differences from the other reactions. More extensive work is now in progress to define the scope and limitations of the reactions noted.

Title:	The Relationship Between Student Achievement and the Congruence of Student Needs with Environmental Press
Researcher:	Larry F. Schofield, Head Department of Science and Mathematics
Institution:	Bartlesville Wesleyan College

Abstract

This study hypothesized that need patterns show only a chance correlation with achievement when the mental aptitude and socio-economic level of the students are controlled, and that the degree of congruence between the needs of students and the environmental press show only a chance difference from achievement when the socio-economic level and mental aptitude of the students are controlled.

At Bartlesville Wesleyan College (formerly Central Pilgrim College), 132 students who completed at least 15 semester hours during the 1967-68 school year were given the Stern Activities Index (AI) as a measure of their needs along 30 scales. Each student's socio-economic index value was determined by the occupation of his father, according to the Duncan modification of the North-Hatt scale. Deviation scores on the 1963 revision of the California Short Form Test of Mental Maturity were used as a measure of mental aptitude. Press scores on 30 scales corresponding to the 30 need scales were obtained from student responses to the College Characteristics Index (CCI).

An analysis of multiple regression was used to test the relationships of the 30 separate need scales with the AI, achievement (grade point average), mental aptitude, and socio-economic level. For the second hypothesis, the differences between each of the mean press scores (CCI) and corresponding scores of the AI were calculated to reveal the degree of congruence between the scales.

Students were divided into three achievement levels and by means of analysis of covariance were related on the 30 congruence values. The first hypothesis was rejected for only the need scale for objectivity. However, a significant loss in productive ability for the scale was experienced when either or both the socio-economic level or mental aptitude of the students was removed. The second hypothesis was rejected for 12 of the congruence values (possible 30). However, the high achievers were more congruent than the low achievers on only a few of the scales while on the other scales the high achievers showed the least congruence.

This suggests that attempts to meet the needs of low ability students often are successful but accompanied by lowered expectations for gifted students. As a result of the lowered challenge, the gifted student works at less than his optimum.

Title: Reorganization and Development of New Materials for Physical Science 1003

Researcher: Ephraim Wall, Professor of Physical Science

Institution: Langston University

Abstract

The project was designed to develop plans and materials for a one-semester course in physical science for non-science majors at Langston University. The course fulfilled general education requirements with emphasis on those materials, procedures, and concepts which provided literacy in physics, chemistry, astronomy, geology, and meteorology as a terminal course in science.

After attending the Institute on Behavioral Objectives for Science, the NSTA Annual Convention which focused attention on sessions dealing with new programs in science for non-science majors, and the NSF-UES Project Directors Conference where he consulted with Dr. Straussenburg, director of the PSNS project, the director then developed a set of behavioral objectives for the course.

Laboratory materials needs for the course were thoroughly studied with the objective of using available materials as far as possible. Additional materials were procured.

A section of twenty-two students was selected at random and taught the PSNS course during the spring semester. The research was designed so that the effects on these students could be compared with the effect of a survey course taught to 110 students in a traditional course. A form was developed to register student reaction in the two sections and data gathered. Students in all sections were administered the Test on Understanding Science, Form W, by Cooley and Kopper. Results had not been summarized at the writing. Vocal responses from the students were slightly on the favorable side. Some students considered the amount of laboratory activity excessive, some demanded "correct answers" instead of activities designed for concept building, and some complained of lack of immediate feedback. The researcher felt a need for more emphasis on behavioral rather than content objectives and a need for testing conceptual and attitudinal changes rather than science knowledge.

Title: Sculptural Research in Metal Sculpture

Researcher: Clark T. Bailey, Associate Professor in Art

Institution: Oklahoma College of Liberal Arts

Abstract

Educational objectives for this project were: (1) to gain proficiency and skills with the most current methods used today in the various welding processes; (2) to explore, both through media and approach, some of the multifaceted areas of contemporary metal sculpture; and (3) to work with one of today's leading sculptors.

One week of intensive work was spent in developing an understanding of and usable technical skills with the following welding processes: shielded metal (arc), gas-metal arc, oxyacetelyne, gas tungsten-arc, and micro-wire.

The second and third week were spent in using any of the techniques of welding in the actual creation of an artistic work. The media used was scrap automobile bumpers. The subject was developed as the project progressed, thus allowing the fullest freedom in the search for the artistic solution to the problem. The oxyacetelyne process of welding was used since it is available to students in the classes at Oklahoma College of Liberal Arts.

Indirectly due to noted sculptors at the workshop, Richard Hunt in particular, acceptance to membership in the National Sculpture Society was attained. Later, top award in the 37th Annual Exhibition of the National Sculpture Society in New York City was given the researcher.

The project lead to other recognition and new opportunities as a sculptor. The experiences of the workshop were invaluable tools to be employed in the learning situation. Now ways to transmit these ideas and approaches to others must be developed.

Title: The Significance of Concepts in the Teaching of Accounting Principles

Researcher: Roger W. Egerton, Assistant Professor in Business Education

Institution: Southwestern State College

Abstract

The research objective was to test the null hypothesis, "there are no significant differences in the scores of second semester accounting students when concepts are emphasized as opposed to the traditional method of teaching which emphasizes a minimum of lecture and a maximum of practice." If the hypothesis were accepted then the practice work load of students could be lightened and a reduction in required teacher time could be realized, along with a reduction in instructional cost.

From a group of approximately 150 accounting students, a random selection of approximately 30 students was made for the control and experimental groups. The experimental group received a treatment of three periods devoted to the developing of concepts and two periods relating the concepts to problem solving situations. No teacher help was given during the problem solving. The control group received one period of lecture with the remaining four periods devoted to repetitive practice work with teacher supervision and help.

Pertinent independent variables of time, topics, instructor, assignments, materials, test instruments and test procedures were controlled throughout the study. Standard deviations, standard error of the deviations and a _t_ value were calculated to determine if significant differences of progress were obtained on any of three different test instruments. Values of _t_ of .3105, .5973, and 1.1947 were not significant at either the .05 or .01 levels. Based upon these findings, the hypothesis was accepted and recommendations made to initiate further research to determine how much cost savings could be effected by teaching concepts and what other related steps could be used to increase the understanding gained by students in several areas of business education using the same techniques.

Title: Some Educational and Social Effects of Closing Negro High Schools in Small Communities in Oklahoma

Researcher: Annie Laurie Coleman, Assistant Professor, Secondary Education

Institution: Langston University

Abstract

The study sought: (1) to identify educational and social changes in small communities affected by the closing of Negro public secondary schools; (2) to discover areas in which former school-related services and activities could be replaced by similar programs from other agencies and to make recommendations for such programs; and (3) to ascertain adults' perceptions of needs for activities as well as institutions and organizations which could sponsor them.

Using two questionnaires and one interview schedule developed in the project, informal interviews were held with Negro adult residents of the communities under study. The respondents were chosen by simple random selection from the community of Red Bird, an all Negro town, and Chandler, a town made up largely of Negroes and Whites.

Educational and social changes affected were in the following areas: adult education classes, recreation, health, civic and cultural activities, and the informal influence of professional education leaders. Perceptions of the educational and social life indicated a reduction in school-centered activities and services, a lack of substitutes for former school-related programs, and the increase in distance traveled to participate in similar activities and to obtain similar services.

The generalization drawn from the findings was that educational and social advantages were reduced for adults by the closing of the schools. The recommendation was made that programs for adults be implemented in communities where high schools have closed, that special provisions be made for transitions, and that further research be done in the area.

Title: The Status of Art Education in the Public Schools in the State of Oklahoma

Researcher: Wallace Owens, Assistant Professor of Art

Institution: Langston University

Abstract

The purpose of this search was to obtain information pertaining to art education in the public schools of the State of Oklahoma.

Questionnaires were mailed to superintendents of schools and art teachers in the state. Visitations were made to selected elementary, junior high, and senior high schools. Correspondence with art supervisors led to conferences with several of them.

Compilation, analyzation, and organization of the results indicated the following:

1. Most of the instruction in art occurs as a regular part of the primary and intermediate classroom activities. Oklahoma City used television to augment art instruction. Tulsa used the platoon system with special art teachers.
2. Most of the art teachers in the state held bachelor's degrees, with approximately 25 percent holding master's degrees.
3. Average class size was 25 to 30 students in each art class, with five to six hours daily taught by the teachers.
4. Concentration in art activities occurred at the elementary and junior high level where art is required.
5. Most of the larger projects had art supervisors.
6. Most of the budgets were inadequate for a successful program. Only about one-third seemed to have an adequate budget.
7. One to three dollars per year was charged as a special fee for art.
8. Facilities were felt to be inadequate even by superintendents.
9. Many of the programs went on exhibition, had good community participation, and had adequate audiovisual equipment.

Offerings were made to high school students in ceramics, crafts, commercial art, graphic arts, drawing, painting, and three-dimensional experience (sculpture). Elementary students could have crafts, ceramics, and graphic arts.

Title: Students Who Leave East Central State College Before They Graduate

Researcher: Roy T. Maxwell, Coordinator of Research and Development

Institution: East Central State College

Abstract

The objectives of this research were: (1) to determine the characteristics of students who leave this institution before they graduate; (2) to determine the reasons students give for leaving East Central State College before they graduate; and (3) to develop a plan to prevent dropouts or reduce their number significantly.

A questionnaire was developed and administered to students enrolled in lower level courses. This questionnaire was then refined and sent by mail to all freshmen and sophomore students. An 1130 IBM computer was used to process these responses and to determine the characteristics of students responding.

Reasons and characteristics were identified and used in developing a tentative plan to reduce the number of dropouts.

Title: A Study of a Rural Negro Community

Researcher: Zelma Delores Reed, Instructor of Sociology

Institution: Langston University

Abstract

Study objectives were: (1) to establish the feasibility of conducting surveys in this particular community; (2) to collect preliminary data; (3) to make a preliminary sketch of the residential, occupational, and genealogical patterns; (4) to provide a means for gaining an entree into the community; and (5) to report findings.

The Langston community was selected on the basis of its homogeneity and its ready access to the reseacher. The study began with a review of the literature on community studies and with the collection of historical data about the village. Contact was made with various community residents including the mayor, the postmistress, and several longtime residents. A census was conducted and a map of residential patterns constructed. Consultants contacted were Dr. Ricciardelli and Dr. Bittle of the University of Oklahoma Anthropology Department, plus Dr. Allen and Dr. Schweitzer, Sociologist and Anthropologist respectively, from Oklahoma State University.

Feasibility of conducting surveys in Langston was verified, and those persons contacted indicated interest in the study and were helpful in giving information. Because of the work needed to update the 1890 and 1927 community maps, only limited occupational and genealogical information was obtained. That collected will serve as a guide for further research on occupational and genealogical patterns. Two students were directly involved in the process and 35 others benefitted indirectly.

Title: The Study of Environmental Perception of Unsuccessful Students on Selected College Campuses

Researcher: Ernest Leon Holloway, Dean of Student Affairs

Institution: Langston University

Abstract

The purpose was to explore the characteristics of environment as perceived by unsuccessful students of selected college campuses. Two Oklahoma state colleges were to be selected for showing the relationship between unsuccessful and successful college students as a result of identified environmental factors. An assumption was that students doing poorly in academic experiences would perceive their campus environment similarly regardless of the uniqueness of the institution.

Pace's theory of describing and measuring environmental perceptions of college students provided the framework for the study. Unsuccessful students were those on academic probation--successful students had cumulative grade point averages of 3.00 and higher on the 4.00 grading system. The College and University Environmental Scales (CUES) was administered from stratified samples from Langston University and Panhandle State College. Seven questions were tested for significant difference (by Pace's criteria) between groups on: (1) academic achievement; (2) sex; (3) housing accommodations; (4) legal residency; (5) extracurricular activities participation; (6) financial assistance; and (7) institution.

Findings indicated that students at differenct institutions had similar perceptions of their environment. Unsuccessful students at both institutions perceived environments relatively the same on practicality, community, campus morale, and quality of teaching. Sex had some influence in that female students reflected higher scores than male students. Students from outside Oklahoma reported a different impression of the "campus press" when compared with legal residents of Oklahoma, perceiving the campus similarly on only two of the seven dimensions--propriety and quality of teaching. Some 205 students were involved in this study which became a dissertation at the University of Oklahoma.

Title: A Study of Student Behavior and Values as Reflected in Non-Assigned, Non-Classroom Situations

Research: Melvyn G. Price, Assistant Professor of Psychology

Institution: Oklahoma City University

Abstract

The purposes stated were to replicate the University of California study done on the Davis campus by Bolton and Kammeyer (1962-1968) in order to determine the effects of present curriculum at Oklahoma City University on students' out-of-class behavior and interaction, and to develop reliable procedures for analyzing "bull sessions" in order to determine impact of future curriculum changes on student life at Oklahoma City University.

From approximately 160 students in undergraduate schools ranking probably slightly above average for the nation, some 43 males and 31 females were randomly selected from the full-time resident undergraduate student body for participation in the project. They were a balanced representation of the total student body.

Only a few alterations of the instruments used in the replicated study were needed. Seven advanced psychology students volunteered and were trained in administering a questionnaire and the other experimental procedures. Each experimenter in the interview had a special twenty-four hour time budget form on which subjects were to describe what they did in fifteen-minute blocks of time during the twenty-four hour period prior to the scheduled interview. For each bull session, a separate bull session reporting form was used. Also, an extensive 48 item attitude and background questionnaire was given to each subject at the conclusion of the interview.

A comparative statistical analysis with the former study was not possible because of the absence of previous data, but generalized comparisons were made and no significant differences were apparent. Oklahoma City University students had many things in common with other university students. The findings revealed a disappointingly low level of educational involvement in non-assigned, non-classroom situations.

Title: A Study of Student Personnel Services Available in Church of the Nazarene Colleges

Researcher: Ray Atwood, Assistant Professor

Institution: Bethany Nazarene College

Abstract

The purpose of this study was to investigate the existing student personnel services in colleges of the Church of the Nazarene in the United States and to record recommendations from administrators for improvement of these services. Study areas were: recruitment, admissions, orientation, registration, counselor, remedial, financial aid, housing, religious life, health services, extracurricular activities, student government, guidance and counseling, testing, food service and supervising student conduct.

After a review of the literature, a feasibility study was made in which a survey instrument was constructed for use in the larger project. Appointments were made for personal interviews and telephone interviews with administrators and student personnel service directors of the nine colleges studied. Administrators were also asked for their recommendations for improvement.

In Church of the Nazarene colleges, 89 percent offered Bachelors of Arts, Science, or Divinity. Master's degrees were offered by 56 percent. Sixty-seven percent were accredited by a national association. All had recruitment programs involving faculty, administrators, and students. Vocational aptitude tests were required in 22 percent of the colleges; 33 percent provided a central job placement office; 8 percent published a yearbook; 78 percent provided remedial courses; and 89 percent provided student housing, health services, and had organized intramural and intervarsity sports. All colleges required standardized scores for admission; had an organized orientation program; used faculty as student advisors; required religious chapel services at least two days each week; scheduled special religious services during the year; published a student newspaper; had an organized student government; and had published dress and behavior codes.

Recommendations for improvement included more student involvement in personnel services. Noted also were the the lack of coordination of student personnel services among colleges studied; lack of feeling of need for orientation courses for adjustment to college life; lack of consideration for essential remedial work (only 78 percent felt it necessary); lack of student representation on planning committees; and lack of adequate vocational guidance or job placement services.

Title: A Study of the Interests in Home Economics of High School Seniors in the Oklahoma Panhandle

Researcher: Charline White, Acting Head of Home Economics

Institution: Oklahoma Panhandle State College

Abstract

The objectives of this research were: (1) to study the interests of high school senior girls in home economics; (2) to relate interests revealed to the curriculum at Panhandle State College; (3) to revise the curriculum to meet needs and interests of prospective students; (4) to encourage enrollment in home economics; and (5) to develop an awareness among high school girls of the possibilities for employment with a degree in home economics.

The "Johnson Home Economics Interest Inventory," an instrument designed by Hildegarde Johnson at Iowa State University to compare student interests in home economics with those of individuals employed in fourteen occupations related to home economics, was administered to 236 senior girls who were enrolled in the fifteen high schools in the Oklahoma Panhandle. Results were tabulated in terms of the percentage of interest in home economics in high, medium, and low categories.

The scores from students in the Oklahoma Panhandle seemed comparable to those scores of students from Iowa State University in both student interest and comparison with interests of persons employed in the related professions. The high school girls tested in this project showed the greatest interest in the area of working with young children. The area of interest which ranked second among these girls was secondary teaching of home economics.

These results guided revisions of the curriculum. Courses were listed in sequence rather than by departments in the catalog and changed in title when needed to clarify course content. The home economics department was to be strengthened in the area of child development and early childhood education (kindergarten and nursery school education) as a result of this project.

Title: **Suburban Political Leadership: Profile and Recruitment**

Researcher: David R. Morgan, Assistant Professor of Political Science

Institution: Oklahoma City University

Abstract

The purpose of this study was to add to the knowledge now available about the social characteristics of elected officials and the recruitment process at the local level by examining the situation found in a group of suburban cities in the Oklahoma City Metropolitan Area.

The study was designed to help answer some pertinent questions about suburban politics, namely the representativeness of elected officials, what kind of person they are, the social groups they respond to, the groups which get them interested in politics, what role politicial parties play, and the relationship between non-partisanship and quality.

Mailed questionnaires were sent out and followed up to obtain a 78.1 percent return from officials about themselves and 100 percent from city clerks about their cities. Data was obtained on the official's age, occupation, education, income, civic positions held, other political offices held, the groups which encouraged his candidacy and how his city political interest developed.

The communities were ranked socially, along with the officials' socioeconomic characteristics. An assumption was indicated that lower ranked communities would likely have officials of lower rank. This was not verified, for in several areas of status the officials from lower ranked communities came out ahead of the middle level cities. The social characteristics of all elected officials in the area proved quite similar--white collar, middle income, and well-educated. The most striking finding on recruitment was the lack of political party involvement. Eighteen of the 50 respondents indicated that they were either asked to run for office by an incumbent or were first contacted by an incumbent following their decision to run.

Title: A Survey of Leadership Consistency in Small Discussion Groups

Researcher: F. H. George, Instructor in Education

Institution: Southeastern State College

Abstract

The object of this study was to ascertain whether or not group leadership consistency existed, as applied to small discussion groups in a public high school.

From Durant High School, 396 students--212 males and 184 females--of heterogeneous ability and achievement from fifteen English classrooms were used as subjects. At no time during the experiment were they told that leaders in their classes were being studied; they were aware only that they were, for research purposes, to be working in discussion groups on an assigned problem.

In phase one, each class was divided into small groups of five to eight at random during a regular class period. Each group was given a topic for discussion. After the discussion, each student was asked to respond to the question, "Who was the 'leader' of your group?" After an interval of several months, a similar discussion session was held. The previously designated leaders were placed in separate groups with students who had not interacted with them in the earlier discussion. Again, students were asked the same question on completion.

A comparison of the leaders named gave the following insight:

In 32 of the 55 groups studied, the same leader was designated. This appears to be 58 percent to 42 percent. However, in seven of the 55 groups, students who were named leaders in phase one were not present for phase two, nullifying the experiment for these seven groups. Removing these makes the following percentages: 32 groups out of 48 chose the same leader in both phases; 66.6 percent of groups did show leadership consistency; 75 percent of the senior groups, 62.5 percent of the junior groups, and 62.5 percent of the sophomore groups chose the same leader consistently. This verified the existence of leadership consistency at least as applied to this public school small discussion group.

Title: A Survey of the Current Aspects of the Physical Organic Chemistry of the Metallocene Series

Researcher: Ralph L. Asbury, Assistant Professor of Chemistry

Institution: Southwestern State College

Abstract

The objective herein was to develop a system designed to thoroughly and efficiently survey current knowledge in the area of the physical-organic chemistry of the metallocene series and to conduct the survey. A further aim was the submission of research proposal to the Petroleum Research Fund of the American Chemical Society and to the National Science Foundation.

The activity consisted of supervising Mrs. Mary C. Neparko, who conducted the literature survey. Mrs. Neparko served as an associate and employee in the project which resulted in research proposals based on the information gleaned from the journals.

Title: A Taxonomic and Ecological Study of the Winter Birds of Pontotoc County, Oklahoma

Researcher: William A. Carter, Associate Professor of Biology

Institution: East Central State College

Abstract

The major objectives of this study were to determine the identity of the winter resident birds even to subspecies, if adequate samples were collected; to record data on the habitat and niche position of these from field observation; and to establish better field methods for recording population, size, and movements during the winter season.

Field surveys during the project period covered as many geographic and ecological areas of the county as possible with eleven student helpers. Observations were recorded in field notes with literature citations. These have become part of the Pontotoc County bird records which are on file cards for efficient use and available to interested persons in the East Central State College Biology Department.

The winter season has been determined to extend from December 1 to March 31 by most ornithological journals. This time period was used, but note was made that many summer bird residents reach that part of Oklahoma by the last of March. Regardless, a total of 98 species or subspecies were recorded for Pontotoc County for that winter season. Specimens were added to the East Central State College Biological Collection. A few students were "employed" for building banding traps but these were completed too late in the season for use. They will be used in preparing specimens and typing. Student participation in the field work was exceptionally good and was so because the students were highly interested.

Title: Teacher Expectations as Determinants of Pupils' Academic Achievement at the Secondary School Level

Researcher: Scott W. Kester, Assistant Professor of Education

Institution: Oklahoma Baptist University

Abstract

In addition to a comprehensive review of the literature, this exploratory research of the secondary school classroom aimed to investigate the relevant variables of interaction between teacher and pupil, and the resulting level of pupil achievement. Another purpose was the evaluation of some existing measuring instruments such as "Bales' Interaction Process Analysis." If this or other existing measuring techniques or instruments were not functional, then the study proposed revising existing instruments or structuring new instruments. The study, also, was to effect an interdisciplinary effort between the Departments of Education and Psychology.

After a review to the literature was completed, the researcher modified existing "category" systems of observation to focus on communication expectations. An instrument (called a Category System of Observation: CSO) was devised to measure variables relevant to this study. Preliminary observations of interaction in a summer school classroom were made to test observer reliability. Then observers were trained in the use of the CSO preparatory to application in the fall session in public schools. The study involved 177 students directly as experimental subjects, one student assistant, and 395 students who participated indirectly. Especially successful was the attempt at effecting an interdisciplinary approach (education and psychology) to the problem. An additional grant was received from Oklahoma Baptist University to expand the project and carry it into the public schools.

Title: Telemetry Studies for the Analysis of Snake Movement

Researcher: Hobart F. Landreth, Associate Professor of Biology

Institution: Southwestern State College

Abstract

Research objectives were to compare methods for placing radio transmitters in rattlesnakes, to develop an antenna system to extend the reception range of the telemetry system, and to develop methods for studying the movements and orientation of rattlesnakes. To achieve these objectives miniature radio transmitters were designed which could be force-fed to snakes. These devices emit a signal on a pre-set frequency to be picked up on a radio receiver equipped with a directional antenna. The location of the snake or transmitter is determined by rotating the antenna to a position where the signal is strongest. Both force-fed and surgically implanted transmitters were compared. Coil antennas were compared to whip and paint-strip antenna. Various techniques were attempted in setting up a design for locating larger numbers of animals. The model of transmitter used proved very successful and functional. Force-feeding of the model was found more convenient for field work. The coil antenna presented several problems but was by far the most useful, as was the directional antenna on the receiver. The technique discovered most useful for finding animals was that of dividing the field study area into quadrants and walking in a systematic pattern. In this manner the whole area can be surveyed by one man. Two students worked as associates in the project while 90 received benefits of the work through instructional processes. Because of the results of the pilot project, the National Science Foundation granted $14,000 to continue the work on the orientation and behavior of rattlesnakes.

Title: Textile Research for College Students

Researcher: Kathleen Lipp, Home Economics Instructor

Institution: Central State College

Abstract

The purpose of this study was to determine the feasibility of a cooperative effort between Oklahoma textile industries and Oklahoma colleges in a textile testing program. The textile testing program would serve as a teaching tool, stimulate student interest in this area of research, and provide some information for consumers, manufacturers, and schools in relation to problems arising from the many new textiles available on the market today. Such a project would benefit industry, schools, students and consumers.

Oklahoma colleges which possibly had courses in textiles were contacted to learn to what extent they would be willing to cooperate in a textile testing program. Industries in Oklahoma were also contacted for their feelings about such a program. In addition, the project provided an opportunity for attendance at a Regional Textile Section of the American Home Economics Association.

Letters were sent to 148 textile manufacturers and "cut and sew" industries in the state. Of these, fifteen responses were received. Only five indicated an interest in a textile testing program. Twenty-one letters were sent to colleges and twelve responded. Seven colleges did indicate a willingness to cooperate.

The survey revealed a lack of testing equipment at the colleges and therefore a lack of experience in this area. Several factors were brought out in the survey of industry. One, there are very few actual manufacturers of textiles in the state, and most "cut and sew" industries depend upon their manufacturer-suppliers for testing of materials used.

Title: Thermal Pumping of Electrolytes

Researcher: Marwin K. Kemp, Assistant Professor of Chemistry

Institution: University of Tulsa

Abstract

The objective of this project was to investigate the effects of a thermal gradient on the transport of an electrolyte across a clay or synthetic ion-exchange membrane. Specific activities were to include purchasing and assembling the equipment needed to begin the experimental work and to run preliminary experiments with montmorillonite as the clay membrane to characterize the system.

A plexiglas tube consisting of two solution compartments separated by a clay membrane formed between two porous glass disks was constructed. Temperature controlling circuits were wired and connected to heaters and thermoregulators inserted through predrilled holes in the plexiglas cell. This allowed temperature control to within plus or minus one-tenth degree centigrade.

An accurately calibrated conductivity cell was inserted into each solution compartment. Changes in electrolyte concentration were determined by changes in resistance across the conductivity cells. Various membrane thicknesses, temperature gradients, and original solution concentrations were studied in order to determine the conditions required to observe electrolyte transport across the membrane.

Results indicate that dilute solutions, thin membranes, and a large temperature differential across the membrance are required to obtain significant concentration changes in a reasonable length of time.

A research grant from the Oklahoma Water Resources Research Institute at Oklahoma State University was obtained to continue the project.

Title: A Time Budget Study of Native, Transitional, and Acculturated Oklahoma American Indians

Researcher: Joseph E. Trimble, Assistant Professor of Psychology

Institution: Oklahoma City University

Abstract

The primary purpose of this project was to develop methods for investigating the utilization of time on a 24-hour basis of three differentiated types of Oklahoma American Indians.

Through consultation with other social scientists and particular Indian leaders an instrument and a methodological procedure were developed for surveying the temporal patterns of Oklahoma's native population. In addition, indigenous student assistants and designated native Americans have been schooled in the procedures and have surveyed various sections of the State of Oklahoma. Their activities were primarily concentrated in areas with a high proportion of native Americans.

A digital computer was used to analyze some of the preliminary surveys as a means verifying this technique for analysis and to test for comparison capabilities with similar findings done on a national scale with non-Indian populations.

Fifty interviews were conducted to test certain steps in the methodology, but the methodological techniques were not completely worked out.

Title: Town and Gown: A Survey of Community-University Attitudes

Researcher: Charles K. Edgley, Assistant Professor of Sociology

Institution: Oklahoma Baptist University

Abstract

The objective of this study was to assess the attitudes, opinions, and information held by citizens of Shawnee, Oklahoma, toward the two institutions of higher education in the city, Oklahoma Baptist University and St. Gregory's College. These were the questions addressed: (1) Are there statistical consistencies in the attitudes of various sub-groups within the community toward the two colleges? (2) What contributions are the colleges making to the community? (3) How can services toward the community be improved?

After a questionnaire was devised, it was sent to a random sample of Shawnee residents by mail, accompanied by a letter of introduction and a self-addressed, stamped envelope. The sample represented six percent of the population and generated 212 returns which were tabulated by age, sex, religion, social class, education, race, and degree of community involvement. Each was also coded according to favorableness or unfavorableness toward each of the two schools.

Findings revealed that:

(1) A majority felt that overall relationships between the community and the two colleges were good. Unfavorable attitudes, however, tended to come from persons with less than high school education, older people, lower class residents, and from among those who had little contact with the two institutions.

(2) Respondents were not as familiar with St. Gregory's as with OBU, and therefore their attitudes toward St. Gregory's were more unfavorable, but no evidence of religious difference appeared.

(3) Minority groups (blacks, Indians, elderly, poor) had little conception of the activities of the two colleges.

(4) Most of the community-student contact dealt with appearances--an important factor in development of attitudes about the two colleges.

(5) Residents wanted more adult education, special education, and professional programs.

Title: Training Junior College Students to Teach Physical Education to the Mentally Retarded

Researcher: Paul Zahler, Instructor of Physical Education and Special Education

Institution: St. Gregory's College

Abstract

This project had a twofold purpose: (1) to provide physical education appropriate to the needs, abilities, and interests of the mentally retarded at Faith 7 School for trainables and Sequoyah School for educables; and (2) to provide educational experiences for junior college students at St. Gregory's College to interest and motivate them to continue their education and to specialize in teaching the mentally retarded.

A one-hour credit course for junior college students was initiated and consisted of the following: one hour a week of theory concerning the fundamentals in teaching physical fitness and lead-up sports and a basic understanding of mental retardation; and two hours a week of supervised group participation in the instruction of the mentally retarded physical education. This course gave Faith 7 and Sequoyah students five hours of physical education. This consisted of two hours of gym and indoor activities, one hour of playground and outdoor activities, and two hours of indoor swimming and diving.

Forty-five mentally handicapped students of Faith 7 School and 30 mentally limited children of Sequoyah School were guided in physical education activities by ten junior college students the first semester and 24 the second semester. The team teaching approach directly involved seven special education teachers and the chairman of the department of physical education at St. Gregory's College, in addition to the director of the program. About ten volunteer aides assisted part time in the program, also.

Title: Tutoring Experiences for College Methods Students with Public School Pupils

Researcher: Carl Downing, Associate Professor of Elementary Education

Institution: Central State College

Abstract

With college students, the objectives were to change attitudes toward public school environments, change concepts toward the task of teaching, improve understanding of how children learn, and determine opinions of the effectiveness of the tutoring experience compared to the class attendance.

Eighteen students enrolled in elementary arithmetic and science materials were used as the experimental group and a like number from another section of the same course used as the control. This control group followed the eighteen week course syllabus. The experimental group met in intensive classroom sessions for six weeks. These sessions were designed to establish basic methods for teaching. At the end of six weeks, each student was assigned two pupils to tutor. They tutored each pupil for two periods a week. The college students' experience were evaluated at weekly seminars.

The evaluation of goals of the project indicated that: (1) the evalution forms used indicate that college students reacted more positively toward the public; (2) more concern for the details of teachings was expressed as well as how little understand learning. Little understanding of how little children learn was generated. The students reacted very favorably to this project.

Title: The Use of Videotape Recorder in Teaching Vocal Technique

Researcher: George Francis Smith, Chairman, Music Department

Institution: Cameron State College

Abstract

This study proposed to develop teaching procedures for the teaching of vocal technique using the videotape recorder and to develop procedures for evaluating student progress in vocal technique.

Published materials concerning the subject were very limited, so educators who had worked in the area were interviewed. They helped to determine research procedures in the search for effective procedures and assisted in the evaluative instrument application.

Thirty-two subjects were randomly selected from 110 high school vocal music students. Subjects were randomly assigned to control and experimental groups of sixteen each. A pre-test tape recording of each subject's singing was then made.

Treatment consisted of a twenty-to-thirty minute weekly private lesson in voice for both groups, with the videotape recorder being used with the experimental group.

An evaluative instrument was constructed. On this instrument ratings from "1" to "7" were made for each student in the areas of breathing techniques, intonation, tone, diction, rhythm and interpretation. A panel of three authorities in vocal music graded each student in a post-test tape recording. The evaluative instrument proved useful and effective in the grading process.

The tape recorder proved very effective in teaching vocal technique through the methods employed.

Title: Seminar to Explore Ways to Select Teacher Candidates and to Evaluate Teacher Performance

Director: W. R. Altmiller, Department of Education and Psychology

Institution: East Central State College

Results: Like-type institutions in Oklahoma got together in a seminar to seek solutions to problems of teacher selection and evaluation. Plans were developed to follow up on problems identified.

Title: Planning and Coordination of Curriculum on College Biology

Director: John C. Branch, Head, Department of Biology

Institution: Oklahoma City University

Results: Curriculum problems were discussed in depth and suggestions made for improving inter-college exchange of information. A planning committee was selected to develop plans for a future follow-up seminar and to collect and disseminate information regarding current and future developments in biology.

Title: Seminar on English in the Junior College

Director: Gary Tate, Department of English

Institution: University of Tulsa

Results: Prospective and current junior college instructors were introduced to innovative two-year English programs that have been developed in other states.

Title: Faculty Development Seminar in Simulation Business Gaming

Director: Marshall Gunselman, Associate Dean for Learning Resources

Institution: Oklahoma Christian College

Results: Faculty members from other colleges and universities, along with personnel managers from local business firms were involved in a series of simulated business games.

Title: Interinstitutional Workshop in Mathematics

Director: Billy D. Spicer and Herbert Monks, Math Department

Institution: Oklahoma Military Academy

Results: Discussion at this seminar led to the development of a proposal to the Cooperative Science Improvement Project of NSF to encourage institutions to work together in the development of a mathematics curriculum for junior college students. The proposal so developed was submitted and funded by the National Science Foundation for $32,000.

Title: Exploring Possible Areas of Administrative Concern Involving the Transfer of Students from Junior Colleges to Senior Colleges within a Geographic Area

Director: H. L. Helton, Director of Research and Development

Institution: Northeastern State College

Results: A committee of eight people representing each of the academic divisions of study at Northeastern State College met with junior college representatives from the area to hear pre-prepared concept papers and to discuss them and to make recommendations for further action. Further study of the problems identified will be made.

Title: Sharing Instructional Media and Resources

Director: Stafford North, Dean

Institution: Oklahoma Christian College

Results: A follow-up seminar on an earlier media seminar involving representatives from business, industry, and education. Participants were appraised of the ways by which colleges and universities of Oklahoma could enhance their learning possibilities through sharing a wide variety of media and other resources. Those present unanimously adopted a resolution requesting that the Oklahoma Consortium on Research Development appoint a task force to study the feasibility of a media and resource sharing system for Oklahoma. A task force was appointed and developed a position paper which led to the establishment of the present instructional television system for higher education.

Title: Dissemination Conference of Research Activities in the State of Oklahoma

Director: E. C. Hall, Dean of Graduate School

Institution: Central State College

Results: Faculty members from small institutions involved in research were given a platform from which to present their research findings. The proceedings of the conference were recorded and made available in booklet form to all those concerned. The reaction of participants to the conference has led to plans for an annual reporting conference and to a state institutional research association.

Title: Methodology Courses in Business Education: Need for Appraisal and Change

Director: Bill G. Rainey, Chairman
Department of Business and Economics

Institution: East Central State College

Results: Consultants and participants of the seminar discussed ways for colleges to work cooperatively for the improvement of instruction, motivation and student interest in business education methodology courses. These sessions were videotaped and the tapes were utilized in methodology courses. An article based on the events of the seminars was readied for submission to one of the national educational journals.

Title: The Formulation of a Logical, Developmental Research Project Focused Primarily on Professional Preparation

Director: Barbara J. Ryan, Committee Chairman, Oklahoma Association for Health, Physical Education, and Recreation

Institution: Central State College

Results: A research development committee was authorized by the Oklahoma Association of Health, Physical Education, and Recreation. All Oklahoma instituions preparing teachers in physical education were involved. The committee met to investigate the feasible approaches for formulating certification recommendations. A research proposal has been developed and will be submitted for funding.

Title: Development of Guidelines for Evaluation in Collegiate Shorthand and Typewriting Courses

Directors: Bill G. Rainey and Carlos E. Johnson, Business Department

Institution: East Central State College

Results: This follow-up seminar resulted in the development and dissemination to colleges and high schools two articles concerning the teaching of shorthand and typing and a booklet which provided guidelines for such teaching.

Title: Encouragement of Research Development Toward Academic Excellence in Oklahoma Junior Colleges

Director: Dean R. Strenger, Academic Dean

Institution: St. Gregory's College

Results: A seminar, involving college students from junior colleges, was held and discussion centered around cooperation among state chapters of Phi Theta Kappa and ways to increase research activity directed toward academic excellence and scholarship. Future seminars were planned to continue this effort.

Title: Development Seminar In Educational Evaluation

Director: Terrence S. Luce, Director, Center for Educational Evaluation

Institution: University of Tulsa

Results: Participants of the seminar became more fully aware of the complexity and scope of the evaluation process.

Title: Institutional Research Seminar

Director: Barbara J. Ryan, Institutional Research Director

Institution: Central State College

Results: A seminar was held involving representatives from the six state four-year colleges. They discussed ways of improving the quality of education; ways to work cooperatively; strategies to acquire federal and foundation funds; and a vehicle by which to accomplish these things.

They recommended the following:

1. Each president of the six four-year institutions appoint one member of his staff to represent him and the institution, to serve on an ongoing council that would meet frequently and regularly to discuss and coordinate projects that are of concern to all six four-year institutions.

2. This six member council be given the authority to seek out and appoint additional ad hoc committees, as needed to carry out the mandates of the council.

3. The council member be recognized as a spokesman for and liaison from the council to the institution he represents in conducting studies that are of mutual concern to all six four-year institutions.

4. The council have the authority to make recommendations to the six presidents collectively and further action and/or implementation would be the recognized responsibility of the presidents of the six four-year institutions.

Title: Student State Constitutional Convention

Director: Jack W. Strain, Assistant Professor, Government

Institution: Central State College

Results: Two planning sessions were held and procedures developed for students from twelve participating institutions to study the constitution of Oklahoma and other states during the coming academic year, under whatever arrangements could be made at each institution. Arrangements made included special reading courses for credit, special unit for existing courses in government, voluntary seminars, and individualized study. Additional Oklahoma Consortium on Research Development funds were obtained to develop a proposal for outside funding to hold a student constitutional convention. The proposal so developed and submitted was not funded, the people of Oklahoma voted against a constitutional convention, the director of this project passed away. Nevertheless, Central State College moved ahead to establish a Constitutional Studies Program which will include special state constitution seminars each semester and during the summer term.

Title: Two Models for Special Education Curricula

Director: Thomas E. Thomason, Associate Professor of Education

Institution: East Central State College

Results: The seminar helped to clarify the behavioral and non-behavioral approaches to curriculum development. Plans were developed for proposals to be submitted for outside funding.

Title: Development Seminar - Curriculum Planning

Director: George H. Lemons, Academic Dean

Institution: Seminole Junior College

Results: Through discussion with representatives from other junior colleges, a better understanding of curriculum planning was achieved, several new programs were added to the curriculum of the Seminole Junior College, a reading laboratory was planned and a reading specialist added to the staff.

Title: A Development Seminar on a Computerized Social Science Information Center for Oklahoma

Director: J. Allen Singleton, Assistant Professor
Social Science Department

Institution: Southeastern State College

Results: Discussion resulted in the identification of Professor Charles Dollar, Oklahoma State University, as coordinator to develop project proposals to be submitted to appropriate funding agencies. A follow-up seminar was planned. The Oklahoma State University Research Foundation has agreed to underwrite the expsnes to move this effort forward. Dr. Dollar will have released time and a budget.

Title: Instructional Innovations in Business Education

Director: Martha J. Rodriguez, Instructor, Business Department

Institution: Northern Oklahoma College

Results: A seminar was held which brought high school and junior college instructors together to explore, initiate, and evaluate instructional innovations in business education. Follow-up seminars are planned for the future.

Title: The Junior College Role in Meeting Problems of Health, Technical Education, and Manpower

Director: Joe Paul Hemphill, Dean of the College

Institution: Poteau Community College

Results: Discussion centered around manpower needs and the possibility for federal funding for training programs. Several proposals were developed and submitted under the Allied Health Professions Personnel Training Act. At least one of these proposals has been funded.

Title: A Seminar on Strengthening Developing Two-Year Colleges in Oklahoma

Director: Peter Green, Academic Dean

Institution: St. Gregory's College

Results: Institutions were given assistance in proposal writing designed to help them strengthen their programs through Title III of the Higher Education Act. As a result of this seminar, St. Gregory's received a Title III grant for $67,000 from the AAJC to establish a regional center for developing colleges. Other Consortium colleges also received grants.

Title: Seminar for Improving the Teaching of Choral Music

Director: George Francis Smith, Chairman, Music Department

Institution: Cameron State Agricultural College

Results: Discussion of problems outlined and possible solutions identified. Two recommendations made including one to hold future seminars.

Title: Seminar on Junior College Journalism

Director: Jim D. Sullivan, Head of Journalism Department

Institution: Eastern Oklahoma State College

Results: Discussion of present offerings and suggestions for course development were made. Plans made for future meetings to develop specific recommendations. Article concerning possible changes appeared in June, 1968, issue of The Oklahoma Publisher.

Title: Training Seminar - Oklahoma Foreign Language Teachers Association

Director: Patricia Pernalete, President of OFLTA

Institution: Oklahoma Baptist University

Results: Two hundred and fifty teachers involved in seminar. Plans made to hold annual workshop for teachers to improve communications and cooperation between secondary and college teachers.

Title: Defining Problems Confronting Professors in Media Application to Their Teaching

Director: William W. Jernigan, Director of Learning Resources

Institution: Oral Roberts University

Results: Seminar resulted in the formulation of a list of recommendations and the development of a bibliography of sources and guides to media software. These were disseminated to Consortium institutions. Several follow-up seminars were planned.

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Title: Follow-Up of OCRD Faculty Research Workshop

Director: Roy Maxwell, Coordinator of Research and Development

Institution: East Central State College

Results: Institutions represented shared ideas concerning the establishment of research offices at their institutions. Plans were developed for future meetings of this group.

Title: Analysis of Variations in Standards of Collegiate Typewriting and Shorthand Programs with Recommendations for Achieving Standards Unification

Directors: Bill G. Rainey and Carlos Johnson, Business Department

Institution: East Central State College

Results: Discussion of issues and plans developed for further study.

Title: Development Seminar on Computers

Director: Jim Herndon, Computer Director

Institution: East Central State College

Results: Discussion of problems associated with computers in small colleges and appropriate materials distributed. Possible follow-up activities were identified of which several were accomplished.

Title: AAJC Program with Developing Colleges

Director: Richard Sneed, President

Institution: St. Gregory's College

Results: As an outgrowth of the seminar, St. Gregory's College, Connors State College, and Northern Oklahoma College have entered into a consortium arrangement to further expedite the development and improvement of each. In cooperation with Oklahoma State University, this consortium submitted a $58,792 proposal under Title III of the Higher Education Act for fiscal year 1970 which was funded.

Title: Identification of Interinstitutional Research Projects in the Area of Guidance and Counseling

Director: Richard Mitchell, Assistant Professor of Education and Psychology

Institution: Central State College

Results: A seminar was held from which two proposals were developed and submitted to the Pupil Personnel Services Branch of the Department of Health, Education and Welfare. (Pending)

Title: State Conference - "Education Professions Development Act" Review and Discussion

Director: E. C. Hall, Dean, Graduate School

Institution: Central State College

Results: Institutional representatives became familiar with the EPDA and obtained application forms and guidelines. A number of proposals were developed and submitted by member institutions with several funded.

Title: Elementary Science Education Instructional Improvement Project

Director: Earl A. Reynolds, Chairman
Division of Mathematics and Physical Science

Institution: Southwestern State College

Results: Plans were made to develop an Elementary Science Guide for the state. Education Professions Development Act proposal developed and submitted. (Pending)

Title: Long-Range Planning and Program Development in Education

Director: Elmer Ferneau, Chairman, College of Education

Institution: University of Tulsa

Results: Publication and dissemination to Consortium institutions of three papers designed to assist institutions with long-range planning and program development.

Title: The "Open Door" Junior College in the State System of Higher Education

Director: Robert M. Anderson, Instructor, Social Science Department

Institution: Northeastern Oklahoma A&M College

Results: Seminar was held, but no organizational follow-up has been done.